



DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R8–ES–2009–0062]

[4500030114]

RIN 1018–AW85

Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Buena Vista Lake Shrew

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; revision and reopening of comment period.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce that we are further revising our proposed revised designation of critical habitat for the Buena Vista Lake shrew (*Sorex ornatus relictus*) under the Endangered Species Act of 1973, as amended (Act). In 2009, we proposed to revise our critical habitat designation to consist

of 4,649 acres (1,881 hectares) of land in five units in Kern County. That acreage has been recalculated, with use of current Geographic Information Systems technology, as 4,657 acres (1,885 hectares). In this revised proposal, we propose to add 525 acres (212 hectares) as critical habitat in the general areas of Kings and Kern Counties, California, including new units near Lemoore, Kings County, and near Semitropic, Kern County, California. In total, we are now proposing to designate approximately 5,182 acres (2,098 hectares) as critical habitat for the Buena Vista Lake shrew. We are reopening the comment period to allow interested parties an opportunity to comment on the proposal to revise the designation of critical habitat for the Buena Vista Lake shrew as proposed to be further revised in this document.

DATES: We will accept comments received or postmarked on or before **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES** section, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Federal eRulemaking Portal:* <http://www.regulations.gov>. Search for Docket No. FWS-R8-ES-2009-0062 and then follow the instructions for submitting comments.

(2) *U.S. mail or hand-delivery*: Public Comments Processing, Attn: FWS-R8-ES-2009-0062; Division of Policy and Directives Management; U.S. Fish and Wildlife Service; 4401 N. Fairfax Drive, MS 2042-PDM; Arlington, VA 22203.

We request that you send comments only by the methods described above. We will post all comments on <http://www.regulations.gov>. This generally means that we will post any personal information you provide us (see the **Public Comments** section below for more information).

FOR FURTHER INFORMATION CONTACT: Susan Moore, Field Supervisor, U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2800 Cottage Way, W-2605, Sacramento, CA 95825; telephone 916-414-6600; facsimile 916-414-6713. If you use a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800-877-8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. This is a proposed revised designation of critical habitat for the endangered Buena Vista Lake shrew under the Endangered Species Act. Under the Act, any species that is determined to be a threatened or endangered species requires designated critical habitat. We must issue a rule to designate critical habitat. In

total, approximately 5,182 acres of critical habitat for the Buena Vista Lake shrew in Kings and Kern Counties, California, fall within the boundaries of the revised critical habitat designation as proposed in this rule.

We designated critical habitat for this species in 2005. As part of a settlement agreement, we agreed to reconsider the designation, and published a proposed revised designation for the Buena Vista Lake shrew in the **Federal Register** on October 21, 2009 (74 FR 53999). Based on new information, we are submitting a revised proposal to designate critical habitat for the Buena Vista Lake shrew to the **Federal Register** on or before the June 29, 2012, settlement date (see Table 1 for additional areas).

Table 1. Revisions and additional areas, in acres, that we are including as proposed critical habitat.

Critical Habitat Unit	Total	State	Private
Unit 4, Coles Levee*	270	46	223
Unit 6, Semitropic Ecological Reserve Unit	372	345	27
Unit 7, Lemoore Wetland Unit	97		97
Total	739	391	347

* Addition of 56 acres from 2009 proposal.

The basis for our action. Under the Endangered Species Act, any endangered or threatened species must have a designated critical habitat. We are required to base the designation on the best available scientific data after taking into consideration economic and other impacts. The Secretary can exclude an area from critical habitat if the benefits of exclusion outweigh the benefits of designation, unless the exclusion will result in the extinction of the species.

We will prepare a revised draft economic analysis. On April 28, 2011, we announced in the **Federal Register** (76 FR 23781) the availability of our draft economic analysis of the 2009 proposed revised designation. That economic analysis did not identify any areas with disproportionate costs associated with the designation. To ensure that we consider the economic impacts of this current proposal, we will revise the draft economic analysis. We will revise the draft economic analysis to include the economic impacts of the additional areas identified in the current revised proposal.

We will incorporate peer review. We sought comments and information from independent specialists to ensure that our 2009 proposed critical habitat designation was based on scientifically sound data, assumptions, and analyses. We invited these peer reviewers to comment on our specific assumptions and conclusions in the critical habitat designation. We will again seek peer review on this revised proposal to revise critical habitat designation. Information we received from peer review will be incorporated in the final revised designation.

Public Comments

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. We will accept written comments and information during this reopened comment period on the revisions herein as well as the proposed revised designation of

critical habitat for the Buena Vista Lake shrew that was published in the **Federal Register** on October 21, 2009 (74 FR 53999), and on the draft economic analysis (DEA) of the 2009 proposed designation and the amended required determinations provided in the April 28, 2011, **Federal Register** (76 FR 23781) document. If you submitted comments or information on the 2009 proposed rule (74 FR 53999, October 21, 2009 and 76 FR 23781, April 28, 2011) during any of the previous comment periods, please do not resubmit them. These comments are included in the public record for this rulemaking, and we will fully consider them in the preparation of our final determination. You may submit your comments and materials concerning this revised proposed rule, the 2009 proposed rule, the DEA associated with the 2009 proposed rule, and the amended required determinations by one of the methods listed in **ADDRESSES**.

We request comments or information from other concerned government agencies, the scientific community, industry, or any other interested party concerning the proposal to revise the designation of critical habitat for the Buena Vista Lake shrew, as revised herein. We particularly seek comments concerning:

(1) The reasons why we should or should not designate habitat as “critical habitat” under section 4 of the Act (16 U.S.C. 1531 *et seq.*) including whether there are threats to the species from human activity, the degree of which can be expected to increase due to the designation, and whether that increase in threat outweighs the benefit of designation such that the designation of critical habitat may not be prudent.

(2) Specific information on:

(a) The amount and distribution of Buena Vista Lake shrew habitat,

(b) What areas, that were occupied at the time of listing (or are currently occupied) and that contain features essential to the conservation of the species, should be included in the designation and why,

(c) Special management considerations or protection that may be needed in critical habitat areas we are proposing, including managing for the potential effects of climate change,

(d) What areas not occupied at the time of listing are essential for the conservation of the species and why, and

(e) Areas identified in this revision to the proposal to revise critical habitat that should not be proposed as critical habitat and why.

(3) Land use designations and current or planned activities in the subject areas and their possible impacts on proposed revised critical habitat.

(4) Information on the projected and reasonably likely impacts of climate change on the Buena Vista Lake shrew and proposed revised critical habitat.

(5) Information that may assist us in identifying or clarifying the physical and biological features essential to the conservation of the Buena Vista Lake shrew, especially as they relate to habitat conditions for the Buena Vista Lake shrew at Atwell Island, Tulare County.

(6) Any probable economic, national security, or other relevant impacts of designating any area that may be included in the final designation; in particular, any impacts on small entities or families, and the benefits of including or excluding areas that exhibit these impacts.

(7) Specific information on the taxonomy of the Buena Vista Lake shrew, especially in relationship to the adorned, or Southern California, ornate shrew (*Sorex ornatus ornatus*) and their respective ranges.

(8) Whether any specific areas we are proposing for critical habitat designation should be considered for exclusion under section 4(b)(2) of the Act, and whether the benefits of potentially excluding any specific area outweigh the benefits of including that area under section 4(b)(2) of the Act.

(9) Whether the potential exclusion of the Kern Fan Recharge Unit (Unit 3) under section 4(b)(2) of the Act, which is covered by the Buena Vista Lake Shrew Special Management Plan for Kern Fan Water Recharge Site, and Addendum, from final critical habitat is or is not appropriate, whether the benefits of excluding any specific area outweigh the benefits of including that area as critical habitat and why, and whether such an exclusion may or may not lead to the species' extinction.

(10) Whether we could improve or modify our approach to designating critical

habitat in any way to provide for greater public participation and understanding, or to better accommodate public concerns and comments.

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments **only** by the methods described in the **ADDRESSES** section.

We will post your entire comment—including your personal identifying information—on <http://www.regulations.gov>. You may request at the top of your document that we withhold personal information such as your street address, phone number, or e-mail address from public review; however, we cannot guarantee that we will be able to do so.

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on <http://www.regulations.gov>, or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Background

It is our intent to discuss only those topics directly relevant to the designation of critical habitat in this proposed rule. In a July 9, 2009, settlement agreement, the Service agreed to publish a new proposal of critical habitat for the species which

encompassed the same geographic area as the August 19, 2004, (69 FR 51417) proposed designation. On October 21, 2009, the **Federal Register** published our proposed revised designation of critical habitat (74 FR 53999), in which we proposed five critical habitat units in Kern County totaling 4,649 acres (ac) (1,881 hectares (ha)). That acreage has been recalculated, with use of current Geographic Information Systems technology, as 4,657 ac (1,885 ha). In this revised proposal to revise the designation, we are notifying the public of several changes made to the 2009 proposed critical habitat. We are now adding two new critical habitat units to our proposal and revising Unit 4 (Cole's Levee) to include a newly discovered occurrence just to the north of the existing unit. Second, we are updating the descriptions of previously proposed units, and revising the criteria and methods sections to accommodate newer geographical information systems technologies. This revised proposed rule incorporates new information on the distribution and presence of the Buena Vista Lake shrew that was not available at the time that we completed our 2009 proposed revised critical habitat rule.

A summary of the information that is relevant to this revised proposed critical habitat designation is provided below. For more information on previous Federal actions concerning the Buena Vista Lake shrew, refer to the proposed revised designation of critical habitat published in the **Federal Register** on October 21, 2009 (74 FR 53999). Additional relevant information may be found in the final rule to designate critical habitat for the Buena Vista Lake shrew published on January 24, 2005 (70 FR 3437). For more information on the Buena Vista Lake shrew or its habitat, refer to the final listing rule published in the **Federal Register** on March 6, 2002 (67 FR 10101), which is available

online at <http://www.regulations.gov> at Docket No. FWS–R8–ES–2009–0062, or by mail from the Sacramento Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Species Description

The Buena Vista Lake shrew (*Sorex ornatus relictus*) is one of nine subspecies within the ornate shrew (*Sorex ornatus*) species complex known to occur in California (Hall 1981, pp. 37, 38; Owen and Hoffmann 1983, pp. 1–4; Maldonado 1992, p. 3). The Buena Vista Lake shrew is a mammal, approximately the size of a mouse. Like other shrews, the subspecies has a long snout, tiny bead-like eyes, ears that are concealed, or nearly concealed by soft fur, and five toes on each foot (Burt and Grossenheider 1964, p. 2; Ingles 1965, pp. 81–84). Shrews are active day or night. When they are not sleeping, they are searching for food (Burt and Grossenheider 1964, p. 3).

Grinnell (1932) was the first to describe the Buena Vista Lake shrew as a new subspecies, based on the type specimen and two other specimens collected around the old Buena Vista Lake bed. A single specimen of the shrew had previously been collected in October 1909, at Buttonwillow, a town approximately 25 miles (mi) (40 kilometers (km)) northwest of Buena Vista Lake (Williams 1986, p. 13; Long 1998, p. 1; California Academy of Sciences 2012). According to Grinnell's description, the Buena Vista Lake shrew's back is predominantly black with a buffy-brown speckling pattern, its sides are more buffy-brown than the upper surface, and its underside is smoke-gray. The tail is

faintly bicolor and blackens toward the end both above and below. The Buena Vista Lake shrew differs from its geographically closest subspecies, the adorned ornate shrew (*Sorex ornatus ornatus*), by having darker, grayish-black coloration, rather than brown. In addition, the Buena Vista Lake shrew has a slightly larger body size; shorter tail; skull with a shorter, heavier rostrum; and a higher and more angular brain-case in dorsal view (Grinnell 1932, pp. 389, 390).

Grinnell (1932, p. 390) noted evidence that integration between the adorned and the Buena Vista Lake shrew subspecies occurred in areas of geographic overlap. This integration prompted Freas (1990, pp. 2, 3) to question the legitimacy of the Buena Vista Lake shrew's status as a subspecies distinct from the broader-ranging adorned ornate shrew. Since the 1990s, the *Sorex ornatus* complex (consisting of eight subspecies in California and one in Baja California) has been the subject of genetic and morphological evaluation (Maldonado 1998). Preliminary results from strictly morphological measurements for this group did not clarify distribution of the various subspecies throughout California. However, mitochondrial DNA and microsatellite, nuclear sequences, and allozyme data have aided in determining subspecies' ranges. From these data, researchers determined that the Buena Vista Lake shrew is a distinct subspecies from other ornate shrew subspecies; and that it is unlike any other sampled throughout the southern San Joaquin Valley (Maldonado 1998), although later authors noted the unsettled taxonomy of ornate shrews (Williams and Harpster 2001, pp. 13, 16). Recent evaluation of the best available scientific information on the ornate shrews has indicated, based on analysis of mitochondrial DNA, that the shrew occurrences in the Tulare Basin

group together with the Buena Vista Lake Shrew (Maldonado 2011 unpaginated; Service 2011 unpaginated; Sacks 2011, unpaginated), although not all species experts agree that methods and genetic sampling are adequate to reach a conclusion (Patton 2011, pp. 1–5). We recognize that there continue to be questions regarding the taxonomy of ornate shrews found in specific localities within the Tulare Basin; however, our current proposal is based on the currently accepted description of the Buena Vista Lake shrew (Grinnell 1932) and the best available science.

Life History

Ornate shrews, on the average, rarely live longer than 12 months, and evidence indicates that the normal lifespan does not exceed 16 months (Rudd 1955, p. 328). The Buena Vista Lake shrew has a breeding season that begins in February or March, and may either extend later in the year, based on habitat quality and availability of water, or end with the onset of the dry season in May or June (Maldonado 1998). The majority of females give birth in the spring, and produce a single litter containing four to six young. Within a population, the number of litters produced per year depends on how early or late in the year the young are born; adults are sexually active in spring, while some young-of-the-year that are born early in the year become sexually active by late summer (Owen and Hoffmann 1983, p. 4). Because the life expectancy of most shrews is 12 to 16 months (Rudd 1955, p. 328), most individuals probably produce no more than two litters in their lifetime, with population replacement occurring annually (Collins 1998).

Shrews are primarily insectivorous. Due to their high rate of metabolism relative to their capacity for energy storage (McNab 1991, p. 35), they must eat more than their own weight each day (Burt and Grossenheider 1964, p. 3) in order to withstand starvation and maintain their body weight. Shrews in this family can have an impact on surrounding plant communities by consuming large quantities of insects, slugs, and other invertebrates that can influence such things as plant succession and the irruptions (population dynamics) of pest insects (Williams 1991, p. 1). The Buena Vista Lake shrew also may be an important prey species for raptors, snakes, and mammalian predators, such as foxes and skunks (Maldonado 1992, p. 7).

Distribution and Historical Range

The Buena Vista Lake shrew was likely historically distributed in the marshlands of the San Joaquin Valley throughout most of the Tulare Basin (Grinnell 1933, p. 83). The Tulare Basin, essentially occupying the southern half of the San Joaquin Valley, had no regular outlet to the ocean and contained Buena Vista, Kern, and Tulare Lakes. These lakes were fed by the Kern, Kaweah, Tule, and Kings rivers and their tributaries, and were interconnected by hundreds of square miles of tule marshes and other permanent and seasonal lakes, wetlands, and sloughs (Williams and Harpster 2001, p. 13). Tulare Lake was the largest freshwater lake in the United States west of the Mississippi River. However, by the time the Buena Vista Lake shrew was discovered, the beds of these lakes were already dry and mostly cultivated, with only sparse remnants of the original fauna (Grinnell 1932, p. 1). Today the lakes and wetlands have been drained and

converted into irrigated agricultural fields, though portions of the historical lake beds fill with water in years of extraordinary runoff (Williams and Kilburn 1992, p. 329).

Habitat Characteristics

As discussed in detail in the **Critical Habitat** section below, the Buena Vista Lake shrew is closely associated with dense, riparian understories that provide food, cover, and moisture (Maldonado 1992, p. 5). Moisture is required to support a diverse insect fauna, which is the primary food source needed to maintain the Buena Vista Lake shrew's high metabolism. During surveys conducted at Kern Lake Preserve in 1988 and 1990, Freas (1990, p. 8) found that the Buena Vista Lake shrew preferred mesic (moderately moist) habitats over xeric (drier) habitats, with 25 animals being captured in the mesic environments and none in xeric habitat. Maldonado (1992, p. 5) also acknowledged this type of habitat preference, stating that the Buena Vista Lake shrew is closely associated with dense, riparian understories that provide food, cover, and moisture. He also noted that moist soil in areas with an overstory of willows or cottonwoods appears to be favored, but may not be an essential habitat feature (Williams and Harpster 2001, p. 13; Maldonado 2011).

The mesic, lower elevation range of the Buena Vista Lake shrew is almost completely surrounded by the semi-arid, higher elevation range of the adorned ornate shrew (Grinnell 1933, pp. 82, 83; Hall 1981, p. 38; Owen and Hoffman 1983, p. 2; Maldonado *et al.* 2001, p. 127). Grinnell (1932, p. 390) noted that adorned ornate shrews

occupied the uplands along streamside habitat and intergraded with the lowland Buena Vista Lake shrews along the lower courses of streams that enter the Kern-Tulare basin.

New Information Specific to Buena Vista Lake Shrew Distribution

At the time of listing, the Buena Vista Lake shrew was identified as occurring in four isolated locations along an approximately 70-mile (mi) (113-kilometer (km)) stretch on the west side of the Tulare Basin: at the former Kern Lake Preserve on the old Kern Lake bed, the Kern Fan water recharge area, Coles Levee, and the Kern National Wildlife Refuge (Kern NWR) (67 FR 10101; March 6, 2002). By the time that critical habitat was proposed in 2004, a fifth occurrence of the Buena Vista Lake shrew had been identified at the historical lake bed of Goose Lake. During the same general period, continuing surveys of riparian and upland habitat resulted in capture of ornate shrews at several additional locations within the Tulare Basin, including Kern, Kings, and Tulare Counties, although the shrews were not identified to the subspecies level (Williams and Harpster 2001, p. 14; Endangered Species Recovery Program (ESRP) 2005, p. 1; Maldonado 2006, p. 5). In 2011, during our 5-year status review of the Buena Vista Lake shrew, we obtained additional information indicating that the shrews at these localities would be considered Buena Vista Lake shrews (Williams and Harpster 2001, p. 16; Maldonado 2011; Service 2011, pp. 6–9). Two of the occurrences (Lemoore and Semitropic Ecological Preserve (also known as Main Drain or Chicca and Sons)) are located within general riparian and wetland habitat known to be suitable for the Buena Vista Lake shrew; however, the third location (Atwell Island) does not match the habitat

that has previously been described for the shrew and does not contain the physical or biological features identified as essential for the conservation of the Buena Vista Lake shrew (see **Critical Habitat** section). Additional information below describes what is now known about the Buena Vista Lake shrew at these locations.

At the time of publication of our 5-year review, surveys for Buena Vista Lake shrews had been conducted at 21 sites and the Buena Vista Lake shrew had been determined to be present in 8 of the sites (Williams and Harpster 2001, pp. 8–14; ESRP 2005, p. 1; Maldonado 2006, p. 5; Cypher 2010). Although shrews at the Semitropic, Lemoore, and Atwell Island locations had not been previously identified to subspecies in Maldonado 2006, communication between Service staff and species experts classified them as Buena Vista Lake shrews (Maldonado 2011). Trapping for Buena Vista Lake shrews has also been completed on the Tule Elk Preserve, Pixley National Wildlife Refuge (NWR), Lake Woollomes, the Nature Conservancy's Paine Wildflower Preserve, the Kern Water Bank, the Voice of America site west of Delano, Kern River Parkway, a parcel between Kern and Buena Vista Lakes owned by the Bureau of Land Management (BLM), the Buena Vista Lake Recreation Area, and Wind Wolves Preserve.

No shrews were detected at any location (Williams 1986, p. 3; Williams and Harpster 2001, pp. 6–12), with the exception of the Wind Wolves Preserve. However, the shrews detected at Wind Wolves Preserve are expected to be adorned ornate shrews based on mitochondrial DNA analysis of one tissue sample available from that location (Maldonado 2006, pp. 9, 16–19; Cypher 2010, p. 1; Maldonado 2011, pp. 1, 2). Several

areas north of the Tulare Lake bed, including Tranquility, Helm, and the Los Banos Wildlife Area, hosted extremely high numbers of ornate shrews in several successful trapping outings, but the shrews collected in those locations were also likely to be the adorned ornate shrew, based on analysis of mitochondrial DNA and microsatellites.(Maldonado 2006, pp. 16–19; Maldonado 2011, pp. 1, 2).

In 1999 and 2000, shrews, which were not identified to subspecies, were captured during a restoration study on a farmland site that had been recently retired at the BLM Atwell Island site, located approximately 2 mi (3.2 km) south of Alpaugh in Tulare County. As described above, these shrews have recently been determined to be Buena Vista Lake shrews; however, the habitat in which they've been located does not match their known wetland habitat. In 1999, most of the captures were on ground that was planted to sugar beets and cotton the previous year. Between 1999 and 2000, a cover crop of barley was planted and harvested on most of the acreage, while a small portion of the area had been fallow longer than 5 years and had a cover of weedy, mostly exotic, annual plants (Williams and Harpster 2001, p. 13). The area has had a long history of irrigated agriculture, with the site surrounded by intensively farmed, irrigated cropland, thus indicating that the location did not match the available descriptions of Buena Vista Lake shrew habitat.

Because shrews were found in an atypical location, surrounded by intensively farmed, irrigated cropland, their discovery led to speculation that the shrews either were able to persist on site during cultivation of irrigated row crops or dispersed to the site

after it was fallowed (Williams and Harpster 2001, pp. 13, 14). Although the site is located within an area that was historically classified as wetland, there is no wetland or riparian vegetation in the areas in which the shrews were found and the nearest water source is over three-quarters of a mile (1.2 km) to the north. The lack of typical shrew habitat components, such as standing water and dense riparian vegetation, have left us to speculate that shrews may persist here due to relatively localized deep cracks in the particular clay soils present in this portion of Atwell Island and the abundance of rodent burrows also present here, both of which may provide additional moisture, invertebrate prey, and cover for the shrews. Currently, this occurrence represents an anomaly that does not correspond to the common information on Buena Vista Lake shrew preferences and needs, and we do not have sufficient information to determine long-term suitability of this habitat type for Buena Vista Lake shrews. We seek additional information on occurrence of shrews in habitat other than wetland and riparian habitat within the Tulare Basin, and on the suitability of this habitat type for Buena Vista Lake shrews.

New Information on Taxonomy

Since the designation of critical habitat in 2005, additional genetic analysis has been conducted to evaluate the patterns of genetic variation within the ornate shrew complex, including the Buena Vista Lake shrew, in the central and southern San Joaquin Valley (Maldonado 2006, p. 16). Maldonado (2006) analyzed microsatellite data and found 5 genetic groupings among the 117 samples that had been collected from 10 localities in the central-southern San Joaquin Valley. The five groupings are: (1)

Tranquility and Helm; (2) Kern NWR, Kern Fan area, Atwell Island, Goose Lake, and Lemoore; (3) Coles Levee; (4) Kern Lake; and (5) Main Drain (Semitropic) (Maldonado 2006, pp. 16–20). Maldonado (2006, p. 14) determined that the levels of relatedness among the five groupings suggest that populations south of Tranquility and Helm form four distinct population groupings. However, because sample sizes from the localities are small, reflecting the rarity of the shrew in these locations, Maldonado emphasized that it is difficult to draw conclusions from the results (Maldonado 2006, pp. 17–19). In our 5-year status review of the subspecies, we reviewed the information above and reviewed the proximity of the various occurrence records. We concluded that the best available information indicates that the populations found south of Tranquility and Helm form four distinct groupings of Buena Vista Lake shrew, while populations at Tranquility and Helm are not the listed species (Service 2011, pp. 9, 10).

Previous Federal Actions

On October 21, 2009, the Service published a revised proposed designation of critical habitat for the Buena Vista Lake shrew (74 FR 53999) encompassing the same geographic area as the August 19, 2004 (69 FR 51417), proposed designation. The Service published a document on April 28, 2011 (76 FR 23781), announcing the reopening of the comment period for the revised proposed critical habitat designation, the associated draft economic analysis, and the amended required determinations. This document also announced a public hearing, which was held in Bakersfield, California, on June 8, 2011. On March 6, 2012, the Service was granted an extension by the Court to

consider additional information on the shrew that was identified during the 5-year review process (*Center for Biological Diversity v. Kempthorne et al.*, Case 1:08-cv-01490-AWI-GSA, filed March 7, 2012). The extension provides for submission of a revised proposed rule to the **Federal Register** on or before June 29, 2012, with submission of a final rule on or before June 29, 2013.

Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

- (1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features
 - (a) Essential to the conservation of the species and
 - (b) Which may require special management considerations or protection; and
- (2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer

necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographic area occupied by the species at the time it was listed are included in a critical

habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical and biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds, seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are the elements of physical or biological features that are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographic area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographic area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the

Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) conservation

actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to ensure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) the prohibitions of section 9 of the Act if actions occurring in these areas may affect the species. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

Physical or Biological Features

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographic area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features that are essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

- (1) Space for individual and population growth and for normal behavior;
- (2) Food, water, air, light, minerals, or other nutritional or physiological

requirements;

- (3) Cover or shelter;
- (4) Sites for breeding, reproduction, or rearing (or development) of offspring; and
- (5) Habitats that are protected from disturbance or are representative of the historical, geographic, and ecological distributions of a species.

We derive the specific physical or biological features required for the shrew from studies of the species habitat, ecology, and life history as described below. Additional information can be found in the final listing rule published in the **Federal Register** on March 6, 2002 (67 FR 10101), the Recovery Plan for Upland Species of the San Joaquin Valley, California (Service 1998), and the Five-Year Review of the Buena Vista Lake Ornate Shrew (Service 2011). We have determined that the following physical or biological features are essential for the Buena Vista Lake shrew:

Space for Individual and Population Growth and Normal Behavior

Historically, the Buena Vista Lake shrew was recorded in association with perennial and intermittent wetland habitats along riparian corridors, marsh edges, and other palustrine (marsh type) habitats in the southern San Joaquin Valley of California. The shrew presumably occurred in the moist habitat surrounding wetland margins in the Kern, Buena Vista, Goose, and Tulare Lakes on the valley floor below elevations of 350 feet (ft) (107 meters (m)) (Grinnell 1932 p. 389; Hall 1981 p. 38; Williams and Kilburn 1984 p. 953; Williams 1986 p. 13; Service 1998 p. 163). With the draining and

conversion of the majority of the Buena Vista Lake shrew's natural habitat from wetland to agriculture, and the channelization of riparian corridors for water conveyance structures, the vegetative communities associated with the Buena Vista Lake shrew were lost or degraded, and nonnative plant species replaced those associated with the shrew (Grinnell 1932 p. 389; Mercer and Morgan 1991 p. 9; Griggs 1992 p. 11; Service 1998 p. 163). Open water does not appear to be necessary for the survival of the shrew. The habitat where the shrew has been found contains areas with both open water and mesic environments (Maldonado 1992 p. 3; Williams and Harpster 2001 p. 12). However, the availability of water contributes to improved vegetation structure and diversity, which improves cover availability. The presence of water also attracts potential prey species, improving prey diversity and availability.

Current survey information has identified eight areas where the Buena Vista Lake shrew has been found in recent years (Maldonado 2006 p. 16; Williams and Harpster 2001 p. 1; ESRP 2005 p. 11): the former Kern Lake Preserve (Kern Preserve) on the old Kern Lake bed, the Kern Fan water recharge area, Coles Levee Ecological Preserve (Coles Levee), the Kern National Wildlife Refuge (Kern NWR), the Goose Lake slough bottoms (Goose Lake), the Atwell Island land retirement demonstration site (Atwell Island), the Lemoore Wetland Reserve, and the Semitropic Ecological Reserve (also known as Main Drain or Chicca and Sons). Based on changes in the native habitat composition and structure, and descriptions of the habitat where the Buena Vista Lake shrew have been found, we identify habitat adjacent to, or within, a matrix of perennial and intermittent wetland habitats along riparian corridors, marsh edges, and other

palustrine (marsh type) habitats as physical features that are needed by the Buena Vista Lake shrew.

Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements

The specific feeding and foraging habits of the Buena Vista Lake shrew are not well known. In general, shrews primarily feed on insects and other animals, mostly invertebrates (Harris 1990 p. 2; Maldonado 1992 p. 6). Food probably is not cached and stored, so the shrew must forage periodically day and night to maintain its high metabolic rate (Burt and Grossenheider 1964, p. 3).

The vegetation communities described above provide a diversity of structural layers and plant species and likely contribute to the availability of prey for shrews. Therefore, conservation of the shrew should include consideration of the habitat needs of prey species, including structural and species diversity and seasonal availability. Shrew habitat must provide sufficient prey base and cover from which to hunt in an appropriate configuration and proximity to nesting sites. The shrew feeds indiscriminately on available larvae and adults of several species of aquatic and terrestrial insects. An abundance of invertebrates is associated with moist habitats, such as wetland edges, riparian habitat, or edges of lakes, ponds, or drainages that possess a dense vegetative cover (Owen and Hoffmann 1983 p. 3). Therefore, based on the information above, we identify a consistent and diverse supply of invertebrate prey to be an essential component of the biological features essential for the conservation of the Buena Vista Lake shrew.

Cover or Shelter

The vegetative communities associated in general with Buena Vista Lake shrew occupancy are characterized by the presence of (but are not limited to): *Populus fremontii* (Fremont cottonwood), *Salix* spp. (willows), *Salicornia* spp. (glasswort), *Elymus* spp. (wild-rye grass), *Juncus* spp. (rush grass), and other emergent vegetation (Service 1998, p. 163). These communities are present at all sites but Atwell Island. In addition, Maldonado (1992, p. 6) found shrews in areas of moist ground that was covered with leaf litter and near other low-lying vegetation, branches, tree roots, and fallen logs; or in areas with cool, moist soil beneath dense mats of vegetation that were kept moist by proximity to the water line. He described specific habitat features that would provide suitable habitat for the shrew: (1) Dense vegetative cover; (2) a thick, three-dimensional understory layer of vegetation and felled logs, branches, and detritus or debris; (3) heavy understory of leaf litter with duff overlying soils; (4) proximity to suitable moisture; and (5) a year-round supply of invertebrate prey. Williams and Harpster (2001, p. 12) determined that, although moist soil in areas with an overstory of willows or cottonwoods appeared to be favored, they doubted that such overstory was essential.

The communities in which Buena Vista Lake shrews have primarily been found are characterized by dense mats of leaf litter or herbaceous vegetation. The insect prey of the shrew also thrives in the dense matted vegetation. Although shrews have also been found at Atwell Island, in an area largely devoid of vegetation but characterized by deep

cracks in the soils, little is currently known of the shrew or habitat needs at this site.

The Buena Vista Lake shrew is preyed upon by small mammalian predators as well as by avian predators (Maldonado 1992, p. 7). Dense vegetative structure provides the cover or shelter essential for evading predators. It also serves as habitat for breeding and reproduction, and allows for the protection and rearing of offspring and the growth of adult shrews. Therefore, based on the information above, we identify riparian and wetland communities, and areas with suitable soil moisture that support a complex vegetative structure with a thick cover of leaf litter or dense mats of low-lying vegetation to be the essential components of the physical and biological features essential to the conservation of the species.

Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring

Little is known about the reproductive needs of the Buena Vista Lake shrew. The breeding season begins in February or March and ends in May or June, but can be extended depending on habitat quality and available moisture (Paul Collins 2000, p. 12). The edges of wetland or marshy habitat provide the shrew with a sheltered and hospitable environment, and provide a prey base that enables the shrew to give birth and raise its young. The dense vegetative understory also provides young with cover from predators. Dense vegetation also allows for the soil moisture necessary for a consistent supply of terrestrial and aquatic insect prey (Freas 1990, p. 8; Kirkland 1991, p. 15; Maldonado 1992, p. 3; Maldonado *et al.* 1998, p. 1; Ma and Talmage 2001, p. 123).

Habitats Protected from Disturbance or Representative of the Historical, Geographic, and Ecological Distributions of the Species

Preserving what little habitat remains for the Buena Vista Lake shrew is crucial to the survival of the species. There are many factors negatively impacting and restricting the shrew and its habitat, including selenium toxicity, habitat fragmentation, urban development, and the effects of climate change. The combined effects of climate change and habitat fragmentation have put immense pressure on species in highly developed areas like the San Joaquin Valley (Hannah and Lovejoy 2005, p. 4). Development has restricted the species to small islands of habitat with little to no connectivity or opportunity for expansion of its range. Climate change is a particular challenge for a variety of species because the interaction between additional stressors associated with climate change and current stressors could push species beyond their ability to survive (Lovejoy 2005, pp. 325–326), including the Buena Vista Lake shrew.

Climate Change

Our analyses under the Endangered Species Act include consideration of ongoing and projected changes in climate. The terms “climate” and “climate change” are defined by the Intergovernmental Panel on Climate Change (IPCC). The term “climate” refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also

may be used (IPCC 2007a, p. 78). The term “climate change” thus refers to a change in the mean or variability of one or more measures of climate (such as, temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007a, p. 78).

Scientific measurements spanning several decades demonstrate that changes in climate are occurring, and that the rate of change has been faster since the 1950s. Examples include warming of the global climate system, and substantial increases in precipitation in some regions of the world and decreases in other regions. (For these and other examples, see IPCC 2007a, p. 30; and Solomon *et al.* 2007, pp. 35–54, 82–85). Results of scientific analyses presented by the IPCC show that most of the observed increase in global average temperature since the mid-20th century cannot be explained by natural variability in climate, and is “very likely” (defined by the IPCC as 90 percent or higher probability) due to the observed increase in greenhouse gas (GHG) concentrations in the atmosphere as a result of human activities, particularly carbon dioxide emissions from use of fossil fuels (IPCC 2007a, pp. 5-6 and figures SPM.3 and SPM.4; Solomon *et al.* 2007, pp. 21–35). Further confirmation of the role of GHGs comes from analyses by Huber and Knutti (2011, p. 4), who concluded it is extremely likely that approximately 75 percent of global warming since 1950 has been caused by human activities.

Scientists use a variety of climate models, which include consideration of natural processes and variability, as well as various scenarios of potential levels and timing of GHG emissions, to evaluate the causes of changes already observed and to project future

changes in temperature and other climate conditions (e.g., Meehl *et al.* 2007, entire; Ganguly *et al.* 2009, pp. 11555, 15558; Prinn *et al.* 2011, pp. 527, 529). All combinations of models and emissions scenarios yield very similar projections of increases in the most common measure of climate change, average global surface temperature (commonly known as global warming), until about 2030. Although projections of the magnitude and rate of warming differ after about 2030, the overall trajectory of all the projections is one of increased global warming through the end of this century, even for the projections based on scenarios that assume that GHG emissions will stabilize or decline. Thus, there is strong scientific support for projections that warming will continue through the 21st century, and that the magnitude and rate of change will be influenced substantially by the extent of GHG emissions (IPCC 2007a, pp. 44–45; Meehl *et al.* 2007, pp. 760–764 and 797–811; Ganguly *et al.* 2009, pp. 15555–15558; Prinn *et al.* 2011, pp. 527, 529). (See IPCC 2007b, p. 8, for a summary of other global projections of climate-related changes, such as frequency of heat waves and changes in precipitation. Also see IPCC 2011(entire) for a summary of observations and projections of extreme climate events.)

Various changes in climate may have direct or indirect effects on species. These effects may be positive, neutral, or negative, and they may change over time, depending on the species and other relevant considerations, such as interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007, pp. 8–14, 18–19). Identifying likely effects often involves aspects of climate change vulnerability analysis. Vulnerability refers to the degree to which a species (or system) is susceptible to, and

unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the type, magnitude, and rate of climate change and variation to which a species is exposed, its sensitivity, and its adaptive capacity (IPCC 2007a, p. 89; see also Glick *et al.* 2011, pp. 19–22). There is no single method for conducting such analyses that applies to all situations (Glick *et al.* 2011, p. 3). We use our expert judgment and appropriate analytical approaches to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change.

Current climate change projections for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and increased summer continental drying (Field *et al.* 1999, pp. 1–3; Hayhoe *et al.* 2004, p. 12422; Cayan *et al.* 2005, p. 6; IPCC 2007, p. 1181). Climate change may lead to increased frequency and duration of severe storms and droughts (McLaughlin *et al.* 2002, p. 6074; Cook *et al.* 2004, p. 1015; Golladay *et al.* 2004, p. 504). Climate projections for smaller subregions such as California remain uncertain. However, modeling of hydrological responses to potential climate change in the San Joaquin watershed suggests that the hydrological system is very sensitive to climatic variations on a monthly and annual basis, with changes in crop phenology and water use suggested (Ficklin *et al.* 2009, pp. 25–27).

Use of downscaled climate modeling for the Sacramento–San Joaquin River Basin shows projected warming, with substantial decadal and interannual variability and altered streamflow seasonality in the southern San Joaquin Valley, suggesting that water

infrastructure modifications would be needed to address changing conditions (Vanrheenen *et al.* 2004, pp. 1, 265–279). Due to the Buena Vista Lake shrew's reliance on dense riparian vegetation and adequate moisture in wetland areas, either increased drying of its home range or changes in water delivery practices that reduce water runoff could negatively affect the shrew, while increases in runoff could benefit the shrew. However, at this time we lack adequate information to make projections regarding the specific effects of climate change and its associated impacts on the Buena Vista Lake shrew and its habitat.

Primary Constituent Elements for the Buena Vista Lake Shrew

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of the Buena Vista Lake shrew in areas occupied at the time of listing, focusing on the features' primary constituent elements. We consider primary constituent elements to be those components of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements for the Buena Vista Lake shrew are:

Permanent and intermittent riparian or wetland communities that contain:

- A complex vegetative structure with a thick cover of leaf litter or dense mats of low-lying vegetation. Associated plant species can include, but are not limited to, Fremont cottonwoods, willows, glasswort, wild-rye grass, and rush grass. Although moist soil in areas with an overstory of willows or cottonwoods appears to be favored, such overstory may not be essential.
- Suitable moisture supplied by a shallow water table, irrigation, or proximity to permanent or semipermanent water; and
- A consistent and diverse supply of prey. Although the specific prey species utilized by the Buena Vista Lake shrew have not been identified, ornate shrews are known to eat a variety of terrestrial and aquatic invertebrates, including amphipods, slugs, and insects.

With this proposed designation of critical habitat, we intend to identify the physical or biological features essential to the conservation of the species, through the identification of the features' primary constituent elements sufficient to support the life-history processes of the species. All units and subunits proposed to be designated as critical habitat are currently occupied by the Buena Vista Lake shrew.

Special Management Considerations or Protections

When designating critical habitat, we assess whether the specific areas within the geographic area occupied by the species at the time of listing contain features that are essential to the conservation of the species and that may require special management considerations or protection. The features essential to the conservation of this species may require special management considerations or protection to reduce the following threats:

All areas included in this proposed revision of critical habitat will require some level of management to address the current and future threats to the physical and biological features essential to the conservation of the Buena Vista Lake shrew. Special management considerations or protection may be required to minimize habitat destruction, degradation, or fragmentation associated with such threats as the following: changes in the water supply allocations, water diversions, flooding, oil and gas extraction, nonnative vegetation, and agriculture. For example, the Coles Levee area is within the boundaries of a proposed oil and gas exploration proposal. Agricultural pressures to convert land to agriculture remain in the southern San Joaquin Valley, with unauthorized agricultural conversion to orchards noted to have occurred recently in the general area.

The designated units are located in areas characterized by large-scale agricultural production, and consequently, the units may be exposed to a number of pesticides, which could detrimentally impact the species. The Buena Vista Lake shrew currently exists on small remnant patches of natural habitat in and around the margins of a landscape that is otherwise dominated by agriculture. The Buena Vista Lake shrew could be directly

exposed to lethal and sublethal concentrations of pesticides from drift during spraying of crops, or potentially directly exposed during herbicide treatment of canal zones and ditch banks, wetland or riparian edges, or roadsides where shrews might exist. Reduced reproduction in Buena Vista Lake shrews could be directly caused by pesticides ingested through grooming, and secondarily from feeding on contaminated insects (Sheffield and Lochmiller 2001, p. 284). A variety of toxicants, including pesticides and heavy metals, have been shown to negatively affect insectivores, including shrews, that have a high basal metabolism and tight energy balance. Treatment-related decreases in invertebrate prey availability may be especially significant to such insectivore populations (Ma and Talmage 2001, pp. 133–152).

The Buena Vista Lake shrew also faces high risks of extinction from random catastrophic events (such as floods or drought (Service 1998, p. 163). The low numbers of Buena Vista Lake shrews located in small isolated areas increases the risk of a random catastrophic event wiping out entire populations or severely diminishing Buena Vista Lake shrew numbers beyond the scope of recovery. These threats and others mentioned above could render the habitat less suitable for the Buena Vista Lake shrew by washing away leaf litter and complex vegetation structure (floods) or drying wetland habitat so that vegetative and prey communities die (drought), and special management may be needed to address these threats.

In summary, the critical habitat units identified in this designation may require special management considerations or protection to provide a functioning hydrological

regime to maintain the requisite riparian and wetland habitat, which is essential in providing the space and cover necessary to sustain the entire life-cycle needs of the shrew, as well as its invertebrate prey. Changes in water supply could result in the alteration of the moisture regime, which could lead to reduced water quality or hydroperiod, loss of suitable invertebrate supply for feeding, and loss of complex vegetative structure for cover. The units may also require special management considerations due to ongoing pressures for agricultural conversion and oil and gas exploration, and pesticide use, and vulnerabilities associated with low populations size and population fragmentation.

Summary of Changes From Previously Proposed Critical Habitat

On January 24, 2005, we designated 84 ac (34 ha) in Kern County California, as critical habitat for the Buena Vista Lake shrew (70 FR 3438). On October 21, 2009, we published in the **Federal Register** a revised proposed critical habitat by reissuing the August 19, 2004, proposed critical habitat, which totaled approximately 4,649 ac (1,881 ha) (69 FR 51417). That acreage has been recalculated, with use of current Geographic Information Systems technology, as 4,657 ac (1,885 ha). We are now proposing to revise this designation to a total of approximately 5,182 ac (2,098 ha) consisting of seven critical habitat units. This is an increase of approximately 525 ac (212 ha) from the October 21, 2009 revised proposed designation. The additional areas include revisions to Unit 4 (Coles Levee) and the addition of Unit 6 (Semitropic Ecological Reserve) and Unit 7 (Lemoore Wetland) (see Table 1). We have also updated the unit descriptions and

revised the criteria and methods sections to accommodate newer geographical information systems technologies. Finally, as the result of our new system for designating critical habitat (77 FR 25611; May 1, 2012), our rule portion now consists of maps only, without accompanying GIS coordinates. However, the coordinates for these maps are available on the Internet at <http://www.regulations.gov> at Docket No. FWS-R8-ES-2009-0062, at <http://www.fws.gov/sacramento/>, or at the Sacramento Fish and Wildlife Office, 2800 Cottage Way, Sacramento, CA 95825.

Criteria Used To Identify Critical Habitat

As required by section 4(b)(2) of the Act, we use the best scientific data available to designate critical habitat. We review available information pertaining to the habitat requirements of the species. In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we consider whether designating additional areas—outside those currently occupied as well as those occupied at the time of listing—is necessary to ensure the conservation of the species. At the time of listing, we were aware of four locations (Kern Lake, Kern National Wildlife Refuge, Coles Levee, and the Kern Fan Water Recharge Area) where the Buena Vista Lake shrew was extant, but we also noted that additional remnant patches of wetland and riparian habitat within the Tulare Basin had not been surveyed and might support the shrew (Service 2002, p. 10103). We considered the geographical area occupied by the species to include areas of remnant wetland and riparian habitat within the Tulare Basin.

As noted previously, shrews were also known from Atwell Island, Tulare County (Williams and Harpster 2001, pp. 13, 14), but had not been identified as Buena Vista Lake shrews. In January 2003, a fifth site, Goose Lake, was surveyed and Buena Vista Lake shrews were also identified at this location (ESRP 2004, p. 8). The Goose Lake Unit was included in the original proposal to designate critical habitat (Service 2004). The Lemoore and Semitropic sites were first surveyed for the Buena Vista Lake shrew in April 2005, and Buena Vista Lake shrews were captured at these sites (ESRP 2005, p. 11, 12).

We propose to designate critical habitat in areas within the geographical area occupied by the species at the time of listing. We include as occupied those areas that meet the following two conditions: (1) They contain the physical or biological features that are essential to the conservation of the species, and (2) they were identified as occupied in the original listing documents or determined to be occupied after 2002. Our reasoning for the inclusion of these additional areas (post-2002) is that, based on the biology of the Buena Vista Lake shrew and the conditions at these units, we have concluded that these areas were occupied at the time of original listing, but the areas had not yet been surveyed at that time. All proposed critical habitat units contain natural habitat containing the physical and biological features essential to the conservation of the species.

As noted above, the Buena Vista Lake shrew is a very small mammal, with an annual life cycle. Shrews, in general, have small home ranges in which they spend most

of their lives, and generally exhibit a high degree of site-attachment, although males and juveniles of some species have been documented to disperse during the breeding season, with movement within a season varying between species from under 10 feet (a few meters) to, in one case, documented movement of 0.5 mi (800 meters) within a year (Churchfield 1990, pp. 55, 56). No proposed critical habitat unit is in close proximity to other units, precluding the potential for movement of shrews from other known occupied sites over the relatively short timeframe of 1 to 2 years. All proposed units retain wetland or riparian features and are within the Tulare Basin, the described historical range of the Buena Vista Lake shrew.

We also consider these proposed critical habitat units to be essential for the conservation of the species because they are areas located throughout the historical range of the species, are occupied, and are needed to maintain the existing distribution of the shrew. All areas are currently occupied and we consider these areas to be sufficient for the conservation of the species. Our generalized criteria for long-term conservation of the Buena Vista Lake shrew specify that three or more disjunct occupied sites, which collectively provide at least 4,940 ac (2,000 ha) of occupied habitat for the shrew, be secured and protected from incompatible uses (Service 1998, p. 192).

We have identified the proposed lands based on the presence of the physical or biological features described above, coupled with occupancy by the shrew. Protecting a variety of habitats and conditions that contain the physical or biological features will allow for the conservation of the species because it will increase the ability of the shrew

to survive stochastic environmental events (fire, drought, or flood), or demographic (low recruitment), or genetic (inbreeding) problems. Suitable habitat within the historical range is limited, although conservation of substantial areas of remaining habitat in the Semitropic area is expected to benefit the shrew. Remaining habitats are vulnerable to both anthropogenic and natural threats. Also, these areas provide habitats essential for the maintenance and growth of self-sustaining populations and metapopulations (a set of local populations where typically migration from one local population to other areas containing suitable habitat is possible) of shrews throughout its range. Therefore, these areas are essential to the conservation of the shrew.

In our development of this revised proposed critical habitat for the shrew, we used the following methods. As required by section 4(b)(2) of the Act and regulations at 50 CFR 424.12, we used the best scientific and commercial data available to determine areas that contain the physical and biological features that are essential for the conservation of the shrew. This included data and information contained in, but not limited to, the proposed and final rules listing the shrew (65 FR 35033, June 1, 2000, and 67 FR 10101, March 6, 2002), the Recovery Plan for Upland Species of the San Joaquin Valley, California (Service 1998), the proposed rule designating critical habitat (69 FR 51417, August 19, 2004), the 5-year status review for the shrew (Buena Vista Lake Ornate Shrew 5-Year Review: Summary and Evaluation, Service 2011), research and survey observations published in peer-reviewed articles (Grinnell 1932, 1933; Hall 1981; Owen and Hoffman 1983; Williams and Kilburn 1984; Williams 1986; Maldonado *et al.* 2001; and Maldonado *et al.* 2004), habitat and wetland mapping and other data collected and

reports submitted by biologists holding section 10(a)(1)(A) recovery permits, biological assessments provided to the Service through section 7 consultations, reports and documents that are on file in the Service's field office (Center for Conservation Biology 1990; Maldonado *et al.* 1998; ESRP 1999a; ESRP 2004; ESRP 2005; and Maldonado 2006), personal discussions with experts inside and outside of the Service with extensive knowledge of the shrew and habitat in the area, and information received during the two previous comment periods.

The five critical habitat units that we originally proposed were delineated by creating rough areas for each unit by screen-digitizing polygons (map units) using ArcView (Environmental Systems Research Institute, Inc. (ESRI)), a computer Geographic Information System (GIS) program. The polygons were created by overlaying current and historical species location points (California Natural Diversity Database (CNDDB) 2004), and mapped wetland habitats (California Department of Water Resources 1998) or other wetland location information, onto SPOT imagery (satellite aerial photography) (CNES/SPOT Image Corporation 1993–2000) and Digital Ortho-rectified Quarter Quadrangles (DOQQs) (USGS 1993–1998) for areas containing the Buena Vista Lake shrew. We utilized GIS data derived from a variety of Federal, State, and local agencies, and from private organizations and individuals. To identify where essential habitat for the shrew occurs, we evaluated the GIS habitat mapping and species occurrence information from the CNDDB (2004). We presumed occurrences identified in CNDDB to be extant unless there was affirmative documentation that an occurrence had been extirpated. We also relied on unpublished species occurrence data

contained within our files, including section 10(a)(1)(A) reports and biological assessments, on site visits, and on visual habitat evaluation in areas known to have shrews, and in areas within the historical ranges that had potential to contain shrew habitat.

For the five units, the polygons of identified habitat were further evaluated. Several factors were used to delineate the proposed critical habitat units from these land areas. We reviewed any information in the Recovery Plan for Upland Species of the San Joaquin Valley, California (Service 1998), other peer-reviewed literature or expert opinion for the shrew to determine if the designated areas would meet the species' needs for conservation and whether these areas contained the appropriate primary constituent elements. We refined boundaries using satellite imagery, soil type coverages, vegetation land cover data, and agricultural or urban land use data to eliminate areas that did not contain the appropriate vegetation or associated native plant species, as well as features such as cultivated agriculture fields, development, and other areas that are unlikely to contribute to the conservation of the shrew.

For the revision of the Coles Levee Unit, and the addition of the Lemoore and Semitropic Units, we utilized shrew occurrence data collected by ESRP (Maldonado 2006, pp. 24 – 27; Phillips 2011), projected data within Arcview (ESRI), and delineated unit polygons. The polygons were created by overlaying species location points (Phillips 2011) onto NAIP imagery (current satellite aerial photography) (National Agriculture Imagery Program 2010) to identify wetland and vegetation features, such as vegetated

canals, canals with cleared vegetation, vegetated sloughs, agricultural fields, and general changes in vegetation and land type. We also projected the original proposed units onto NAIP imagery and again utilized additional GIS data derived from a variety of Federal, State, and local agencies.

When determining revised proposed critical habitat boundaries, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features necessary for the Buena Vista Lake shrew. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this proposed rule have been excluded by text in the proposed rule and are not proposed for designation as critical habitat. Therefore, if the critical habitat is finalized as proposed, a Federal action involving these lands would not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

In summary, we are proposing to designate seven units as critical habitat. We have determined that the units were occupied at the time of listing, and that they are currently occupied (see Table 2). The units provide the physical or biological features needed to support the Buena Vista Lake shrew. The seven units contain the physical or biological features essential to the conservation of the species. We currently are

proposing to include seven of eight known occupied sites, totaling 5,182 ac (2,098 ha), as critical habitat. We have determined that unoccupied areas are not currently essential to the conservation of the species.

Table 2. Occupancy of Buena Vista Lake shrew by revised proposed critical habitat units.

Unit	Occupied at Time of Listing?	Currently Occupied?
1. Kern National Wildlife Refuge Unit	yes	yes
2. Goose Lake Unit	yes	yes
3. Kern Fan Water Recharge Unit	yes	yes
4. Coles Levee Unit	yes	yes
5. Kern Lake Unit	yes	yes
6. Semitropic Ecological Reserve Unit	yes	yes
7. Lemoore Wetland Unit	yes	yes

The approximate area of each revised proposed critical habitat unit is shown in Table 3.

Table 3. Revised proposed critical habitat units for the Buena Vista Lake shrew.
[Area estimates reflect all land within critical habitat unit boundaries.]

Critical Habitat Unit	Total		Federal		State		Local		Private	
	ac	ha	ac	ha	ac	ha	ac	ha	ac	ha
Unit 1, Kern National Wildlife Refuge										
Subunit 1A	274	111	274	111						
Subunit 1B	66	27	66	27						
Subunit 1C	47	19	47	19						
Unit 2, Goose Lake	1,279	518							1,279	518
Unit 3, Kern Fan Water Recharge	2,687	1,088					2,687	1,088		
Unit 4, Coles Levee	270	109			46	19			223	90
Unit 5, Kern Lake Unit	90	36							90	36
Unit 6, Semitropic Ecological Reserve Unit	372	151			345	140			27	11
Unit 7, Lemoore Wetland Unit	97	39							97	39
Total	5,182	2,098	387	157	391	159			1,716	694

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for the Buena Vista Lake shrew, below.

Unit 1: Kern National Wildlife Refuge (Kern NWR) Unit

The Kern NWR Unit is completely comprised of Federal lands, and is located within the Kern NWR in northwestern Kern County. The Kern NWR Critical Habitat Unit consists of three subunits totaling approximately 387 ac (157 ha): subunit 1A contains 274 ac (111 ha); subunit 1B contains 66 ac (27 ha); and subunit 1C contains 47 ac (19 ha). The unit was occupied at the time of listing, is currently occupied, and contains the physical and biological features that are essential to the conservation of the shrew. Shrew habitat in Unit 1 receives water from the California Aqueduct. One of the

areas where Buena Vista Lake shrews are present has standing water from September 1 through approximately April 15. After that time, the trees in the area may receive irrigation water so the area may possibly remain damp through May, but the area is dry for approximately 3 months during the summer. Another area of known Buena Vista Lake shrew occurrences has standing water from the second week of August through the winter and into early July, and is only dry for a short time during the summer. Buena Vista Lake shrew captures have occurred in remnant riparian and slough habitat at the refuge (Service 2005b, pp. 48, 49).

This unit is essential to the conservation of the species because it is occupied, and the subunits include riparian habitat that contain the primary constituent elements. *Populus fremontii* trees (Fremont cottonwood), and *Salix* spp. (willow) are the dominant woody plants in riparian areas. Additional plants include *Scirpus* spp. (bulrushes), *Typha* spp. (cattails), *Juncus* spp. (rushes), *Heleocharis palustris* (spike rush), and *Sagittaria longiloba* (arrowhead). Other plant communities on the refuge that support shrews are valley iodine bush scrub, dominated by *Allenrolfea occidentalis* (iodine bush), *Suaeda* spp. (suaeda or seepweed), *Frankenia salina* (alkali heath), and salt-cedar scrub, which is dominated by *Tamarix* spp. (salt cedar). Both of these communities occupy sites with moist, alkaline soils.

The Kern NWR completed a Comprehensive Conservation Plan (CCP) for the Kern and Pixley NWRs in February 2005 (Service 2005b, pp. 1-103). The CCP provides objectives for maintenance and restoration of Buena Vista Lake shrew habitat on the

Kern NWR. Objectives listed in the CCP include completing baseline censuses and monitoring for the shrew, enhancement and maintenance of the 215-ac (87-ha) riparian habitat, through regular watering, to provide habitat for riparian species, including the shrew, and additional restoration of 15 ac (6 ha) of riparian habitat along canals in a portion of the refuge to benefit the shrew and riparian bird species (Service 2005b, pp. 84, 85). The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from nonnative species such as salt cedar, and from changes in hydrology due to off-site water management.

Unit 2: Goose Lake Unit

The Goose Lake Unit consists of 1,279 ac (518 ha) of private land, and is located about 10 mi (16 km) south of Kern NWR in northwestern Kern County, in the historical lake bed of Goose Lake. We consider that the unit was occupied at the time of listing and assume that it was not identified as occupied at that time because it had not yet been surveyed for small mammals. In January 2003, when the area was first surveyed for small mammals, approximately 6.5 ac (2.6 ha) of potential shrew habitat located along the Goose Lake sloughs were surveyed (ESRP 2004, p. 8), resulting in the capture of five Buena Vista Lake shrews. The maximum distance between two shrew captures was 1.6 mi (2.6 km), suggesting that Buena Vista Lake shrews are widely distributed on the site. The unit has been determined to have the necessary PCEs present and therefore meets the definition of critical habitat under section 3(5)(A)(i) of the Act. The unit was included in

the 2004 proposed critical habitat designation. Although we continue to presume that the unit meets the definition of critical habitat under section 3(5)(A)(i) of the Act, we are also proposing to designate the unit under section 3(5)(A)(ii) of the Act. Even if the unit was not occupied at the time of listing, it is essential for the conservation of the shrew because it is considered to be currently occupied, is within the subspecies' range, and includes riparian habitat containing the PCEs in sloughs and wetlands and meets our criteria for designation as critical habitat.

In the past, Buena Vista Lake shrew habitat in this unit experienced widespread losses due to the diversion of water for agricultural purposes. However, small, degraded examples of freshwater marsh and riparian communities still exist in the area of Goose Lake and Jerry Slough (a portion of historical Goose Slough, an overflow channel of the Kern River), allowing shrews to persist in the area. Dominant vegetation along the slough channels includes *Frankenia* spp. (frankenian), *Allenrolfea occidentalis* (iodine bush), and *Suaeda* spp. (seepweed). The northern portion of the unit consists of scattered mature *Allenrolfea occidentalis* shrubs in an area that has relatively moist soils. The southern portion of the unit is characterized by a dense mat of *Distichlis* spp. (saltgrass) and clumps of *Allenrolfea* and *Suaeda* spp. A portion of the unit currently exhibits inundation and saturation during the winter months. Dominant vegetation in these areas has included cattails, bulrushes, *Juncus* spp., and saltgrass.

The Goose Lake area is managed by the Semitropic Water Storage District (WSD) as a ground-water recharge basin. Water from the California Aqueduct is

transferred to the Goose Lake area in years of abundant water, where it is allowed to recharge the aquifer that is used for irrigated agriculture. At the time that the unit was originally proposed, the landowners, in cooperation with Ducks Unlimited, Inc. and Semitropic WSD, proposed to create and restore habitat for waterfowl in the unit area; wetland restoration that we expected to substantially increase the quantity and quality of Buena Vista Lake shrew habitat on the site. Restoration activities were completed in the last 5 years. The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from nonnative species such as salt cedar, from recreational use, and from changes in hydrology due to water management and maintenance of water conveyance facilities. There are currently no conservation agreements covering this land.

Unit 3: Kern Fan Water Recharge Unit

The Kern Fan Water Recharge Area Unit consists of 2,687 ac (1,088 ha) of private land, which is within the 2,800-ac, (1,133-ha) Kern Fan Water Recharge Area, and is owned by the City of Bakersfield. The unit is located along the banks of the Kern River, west of Bakersfield, and is adjacent to the Kern Water Bank, a 19,000-ac (7,689-ha) area owned by the Kern Water Bank Authority. Portions of the recharge area are flooded sporadically, forming fragmented wetland communities throughout the area.

This unit was occupied at the time of listing, is currently occupied by the Buena Vista Lake shrew, and includes the physical and biological features that are essential to

the conservation of the Buena Vista Lake shrew. Remnant riparian areas are found throughout the area, but are mainly located in narrow strips near the main channel of the Kern River and are dominated by Fremont cottonwood, *Salix* spp. (willow species), *Urtica dioica* (stinging nettle), *Leymus triticoides* (creeping wild rye), *Baccharis salicifolia* (mulefat), and *Asclepias fascicularis* (narrow-leaved milkweed). The plant communities of the Kern Fan Water Recharge Area also include a mixture of Valley saltbush scrub and Great Valley mesquite shrub. The Valley saltbush scrub is characterized by the presence of *Atriplex polycarpa* (Valley saltbush), alkali heath, *Isocoma acradenia* (goldenbush), and *Hemizonia pungens* (common spikeweed). The soils in this area are sandy to loamy with no surface alkalinity. This community seems to intergrade with the Great Valley mesquite scrub plant community. This is an open scrubland dominated by *Prosopis juliflora* (mesquite), Valley saltbush, and goldenbush. The soils also are sandy loams of alluvial origin (soil types deposited by rivers).

Willow species, stinging nettles, and a thick mat of creeping wild rye dominate the location of the captured Buena Vista Lake shrews. Other plant species found in locations where the Buena Vista Lake shrews were trapped include Fremont cottonwood and salt grass. At the time of capture, this site had no standing water within 328 feet (100 meters) of the location where the Buena Vista Lake shrews were caught.

The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from nonnative species such as salt cedar, and from changes in hydrology due to off-site

water management, especially in dry years. The unit is adjacent to, but not included within, the Kern Water Bank Habitat Conservation Plan/Natural Community Conservation Plan (Kern Water Bank HCP/NCCP) permit area (Kern Water Bank Authority 1997, p. 7).

Over the past seven years, the City of Bakersfield has worked with the Service to make management changes to benefit the Buena Vista Lake shrew, and has completed annual monitoring to assess habitat conditions for the Buena Vista Lake shrew. The City of Bakersfield is working with the Service to improve assurances for protection of the Buena Vista Lake shrew in this unit. The Service is considering whether to exclude this unit from critical habitat.

Unit 4: Coles Levee Unit

The Coles Levee Unit is approximately 270 ac (109 ha) in Kern County, of which 223 ac (90 ha) is owned by Aera Energy. An additional 46 ac (19 ha) are State lands within the Tule Elk Reserve. The unit is located northeast of Tupman Road near the town of Tupman, is directly northeast of the California Aqueduct, and is largely within the Coles Levee Ecosystem Preserve, which was established as a mitigation bank in 1992, in an agreement between Atlantic Richfield Company (ARCO) and California Department of Fish and Game. The preserve serves as a mitigation bank to compensate for the loss of habitat for listed upland species; the Buena Vista Lake shrew is not a covered species. The preserve is mostly highly degraded upland saltbush and mesquite

scrub, and is interlaced with slough channels for the historical Kern River fan where the river entered Buena Vista Lake from the northeast. Most slough channels are dry except in times of heavy flooding, every several years. The preserve also contains approximately 2 mi (3.2 km) of much-degraded riparian communities along the Kern River.

A manmade pond, which was constructed in the late 1990s or early 2000s, is located within the unit. Water from the adjacent oil fields is constantly pumped into the basin. Vegetation includes bulrushes, stinging nettle, mulefat, salt grass, *Atriplex lentiformis* (quailbush), and *Conium maculatum* (poison hemlock). There are a few willows and Fremont cottonwoods scattered throughout the area. This site runs parallel to the Kern River bed.

In the 2009 proposed rule (74 FR 53999, October 21, 2009), we repropose 214 ac (87 ha) of critical habitat as the Coles Levee Unit. In this unit, Buena Vista Lake shrews were originally captured along a nature trail that was adjacent to a slough, and were close to the water's edge where there was abundant ground cover but little or no canopy cover. The unit is delineated in a general southeast to northwest direction, along both sides of the Kern River Flood Channel and Outlet Canal, which runs through the Preserve. During a construction project in the summer of 2011, two Buena Vista Lake shrews were found just north of the previous northerly boundary of the unit. We have therefore extended the unit boundary along both sides of the canal to encompass the contiguous riparian habitat to the point where water is no longer retained and riparian

vegetation essentially stops, thereby including riparian habitat along the Outlet Canal within the Tule Elk Reserve.

This unit is essential to the conservation of the species because it is occupied and includes willow-cottonwood riparian habitat that contains the PCEs. The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from construction activities associated with projects to tie-in water conveyance facilities to the California Aqueduct and oil and gas-related activities, including pipeline projects. The area adjacent to Coles Levee is the site of active gas and oil production, and the Coles Levee Unit is within an area that was recently proposed for oil and gas exploration.

An HCP was issued for the Coles Levee Ecological Preserve Area. However, the HCP permit expired when ARCO sold the property to the current owner and the permit was not transferred.

Unit 5: Kern Lake Unit

The Kern Lake Unit is approximately 90 ac (36 ha) in size, and is located at the edge of the historical Kern Lake, approximately 16 miles south of Bakersfield in southwestern Kern County. This unit lies between Hwy 99 and Interstate 5, south of Herring Road near the New Rim Ditch. The unit was occupied at the time of listing, is considered currently occupied, and contains the physical and biological features that are

essential to the conservation of the Buena Vista Lake shrew. Since the advent of reclamation and development, the surrounding lands have seen intensive cattle and sheep ranching and, more recently, cotton and alfalfa farming. Currently, Kern Lake itself is generally a dry lake bed; however, the unit contains wet alkali meadows and a spring-fed pond known as “Gator Pond,” which is located near the shoreline of the lake bed. A portion of the runoff from the surrounding hills travels through underground aquifers, surfacing as artesian springs at the pond. The heavy clay soils support a distinctive assemblage of native species, providing an island of native vegetation situated among agricultural lands. The unit contains three ecologically significant natural communities: freshwater marsh, alkali meadow, and iodine bush scrub.

The moisture regime for shrew habitat in this unit is maintained by agricultural runoff from the New Rim ditch. This unit is essential to the conservation of the species because it is currently occupied and includes habitat that contains the PCEs identified for the shrew. The Kern Lake area was formerly managed by the Nature Conservancy for the Boswell Corporation, and was once thought to contain the last remaining population of the Buena Vista Lake shrew.

The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from reductions in water delivery, from effects of surrounding agricultural use, and from industrial and commercial development. The proposed Maricopa Sun solar development is within a 2-mile radius of the unit. This area does not have a conservation easement and

is managed by the landowners. We are unaware of any plans to develop this site; however, it is within a matrix of lands managed for agricultural production.

Unit 6: Semitropic Ecological Reserve Unit

Unit 6 is located about 7 mi (11 km) south of Kern NWR and 7 mi (11 km) north of the Goose Lake unit along the Main Drain Canal. It is bordered on the south by State Route 46, approximately 2 mi (3 km) east of the intersection with Interstate 5, and is 372 ac (151 ha) in size. The State of California, Department of Fish and Game, holds 345 ac (140 ha) under fee title, and manages the area as part of the Semitropic Ecological Reserve. An additional 27 ac (11 ha) of the unit are private land.

We consider that the unit was occupied at the time of listing and assume that it was not identified as occupied at that time because it had not yet been surveyed for small mammals (see *Criteria Used To Identify Critical Habitat*). Buena Vista Lake shrews were identified in the unit on April 27, 2005, when it was first surveyed for small mammals (ESRP 2005, pp. 10–13). At that time, Buena Vista Lake shrews were found in the southwestern portion of the unit, next to the Main Drain Canal. The unit has been determined to have the necessary PCEs present and therefore meets the definition of critical habitat under section 3(5)(A)(i) of the Act. Although we presume that the unit meets the definition of critical habitat under section 3(5)(A)(i) of the Act, we are also proposing to designate the unit under section 3(5)(A)(ii) of the Act. Even if the unit was not occupied at the time of listing, it is essential for the conservation of the Buena Vista

Lake shrew due to its location approximately midway between Units 1 and 2, and location near the southern edge of remnant natural wetland and riparian habitat. The unit is also considered essential for the conservation of the shrew because it is considered to be currently occupied, and contains a matrix of riparian and wetland habitat, including riparian habitat both along the canal, and within and adjacent to oxbow and slough features.

The major vegetative associations at the site are valley saltbush scrub and valley sink scrub. Valley saltbush scrub is found within the relatively well-drained soils at slightly higher elevations, and the valley sink scrub is found in the heavier clay soils. Dominant vegetation at the site includes *Bromus diandrus* (ripgut brome), *Bromus madritensis* ssp. *rubens* (red brome), *Carex* spp. (sedges), *Juncus* spp. (rushes), *Polygonum* spp. (knotweed), *Polypogon monspeliensis* (rabbitfoot grass), *Rumex crispus* (curly dock), and *Vulpia myuros* (foxtail fescue). There is a light overstory of *Populus* spp. (cottonwoods) at the most successful Buena Vista Lake shrew capture site.

The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from ongoing oil and gas exploration and development, ongoing conversion of natural lands for agricultural development, changes in water management, weed control activities, including use of herbicides, and the occurrence of range trespass in an open range area. Semitropic reserve lands are not fenced and are subject to occasional range trespass by sheep and cattle (CDFG 2012). State lands in the unit were acquired under

the provisions of the Metro Bakersfield Habitat Conservation Plan (HCP), and are managed for listed upland species. Location of the Main Drain Canal in the unit, and the presence of wetland features are expected to benefit the shrew, although the shrew is not a covered species under the HCP. The State does not yet have a management plan for the Semitropic Ecological Reserve.

Unit 7: Lemoore Wetland Reserve Unit

The Lemoore Wetland Reserve Unit is located east of the Lemoore Naval Air Station and is 4 mi (6 km) west of the City of Lemoore in Kings County. The unit is bounded along the southern border by State Route 198, and on the north and west sides by a bare water-conveyance canal. It is 97 ac (39 ha) in size. The Unit is managed by the Natural Resources Conservation Service for waterfowl enhancement.

We consider that the unit was occupied at the time of listing and that it was not identified as occupied at that time because it had not yet been surveyed for small mammals (see *Criteria Used To Identify Critical Habitat*). Buena Vista Lake shrews were identified in the unit April 20-22, 2005, when it was first surveyed for small mammals (ESRP 2005, pp. 10–13). The unit has been determined to have the necessary PCEs present and, therefore, meets the definition of critical habitat under section 3(5)(A)(i) of the Act. Although we presume that the unit meets the definition of critical habitat under section 3(5)(A)(i) of the Act, we are also proposing to designate the unit under section 3(5)(A)(ii) of the Act. The unit is essential for the conservation of the

shrew due to its location approximately at the northernmost extent of the subspecies' range, due to occupancy, and due to remnant natural wetland and riparian habitat that contains the PCEs.

The site was created to provide a place for city storm water to percolate and drop contaminants to shield the Kings River during years of flood runoff. Portions of the area are flooded periodically, forming fragmented wetland communities throughout the area.

The plant communities of the Lemoore Wetland Reserve Unit include a mixture of vegetation communities: nonnative grassland, vernal marsh, and elements of valley sink scrub. *Brassica nigra* (black mustard), *Bromus madritensis* ssp. *rubens* (red brome), *B. hordeaceus* (soft chess), *Distichlis spicata* (saltgrass), *Frankenia salina* (alkali heath), *Juncus* spp. (rushes), *Lactuca serriola* (prickly lettuce), *Polypogon monspeliensis* (rabbitfoot grass), *Populus* spp. (cottonwood), curly dock (*Rumex crispus*), willow (*Salix* spp.), bulrush (*Scirpus* spp.), common sowthistle (*Sonchus oleraceus*), cattails (*Typha* spp.), foxtail fescue (*Vulpia myuros*) and cocklebur (*Xanthium strumarium*) are common throughout the site. This unit is essential to the conservation of the species because it is currently occupied and contains the PCEs identified for the shrew. It is the northernmost occurrence of the shrew and, therefore, would be considered essential to protecting the outermost portions of its known range.

Effects of Critical Habitat Designation

Section 7 Consultation

Section 7(a)(2) of the Act requires Federal agencies, including the Service, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act, or result in the destruction or adverse modification of any critical habitat proposed to be designated for such species.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of “destruction or adverse modification” (50 CFR 402.02) (see *Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir. 2004) and *Sierra Club v. U.S. Fish and Wildlife Service et al.*, 245 F.3d 434, 442 (5th Cir. 2001)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions

that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from the Service under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

- (1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or
- (2) A biological opinion for Federal actions that may affect, or are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species and/or destroy or adversely modify critical habitat, we may provide reasonable and prudent alternatives to the project, if any are identifiable, that would avoid the likelihood of jeopardy and/or destruction or adverse modification of critical habitat. We define “reasonable and prudent alternatives” (at 50 CFR 402.02) as alternative actions identified during consultation that:

- (1) Can be implemented in a manner consistent with the intended purpose of the

action,

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species and/or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

Application of the "Adverse Modification" Standard

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for the Buena Vista Lake shrew. As discussed above, the role of critical habitat is to support life-history needs of the species and provide for the conservation of the species.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation.

Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the Buena Vista Lake shrew. These activities include, but are not limited to:

(1) Actions that would affect riparian or wetland areas by any Federal agency. Such activities could include, but are not limited to, flood control or changes in water banking activities. These activities could eliminate or reduce the habitat necessary for the reproduction, sheltering, or growth of Buena Vista Lake shrews.

(2) Actions that would affect the regulation of water flows by any Federal agency. Such activities could include, but are not limited to, damming, diversion, and

channelization. These activities could eliminate or reduce the habitat necessary for the reproduction, sheltering, or growth of Buena Vista Lake shrews.

(3) Actions that would involve regulations funded or permitted by the Federal Highway Administration (We note that the Federal Highway Administration does not fund the routine operations and maintenance of the State highway system). Such activities could include, but are not limited to, new road construction and right-of-way designation. These activities could eliminate or reduce riparian or wetland habitat along river crossings necessary for reproduction, sheltering, or growth of Buena Vista Lake shrews.

(4) Actions that would involve licensing of construction of communication sites by the Federal Communications Commission. Such activities could include, but are not limited to, the installation of new radio equipment and facilities. These activities could eliminate or reduce the habitat necessary for the reproduction, sheltering, foraging, or growth of Buena Vista Lake shrews.

(5) Actions that would involve funding of activities by the U.S. Environmental Protection Agency, Department of Energy, Federal Emergency Management Agency, or any other Federal agency. Such activities could include, but are not limited to, activities associated with the cleaning up of Superfund sites, erosion control activities, and flood control activities. These activities could eliminate or reduce upland or aquatic habitat for Buena Vista Lake shrews.

(6) Actions that would affect waters of the United States by the Army Corps under section 404 of the Clean Water Act. Such activities could include, but are not limited to, placement of fill into wetlands. These activities could eliminate or reduce the

habitat necessary for the reproduction, feeding, or growth of Buena Vista Lake shrews.

Exemptions

Application of Section 4(a)(3) of the Act

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

- (1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;
- (2) A statement of goals and priorities;
- (3) A detailed description of management actions to be implemented to provide for these ecological needs; and
- (4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: “The Secretary shall not designate as critical habitat any lands or other geographic areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation.”

There are no Department of Defense lands within the revised proposed critical habitat designation and as a result, we are not exempting any lands under section 4(a)(3)(B) of the Act.

Exclusions

Application of Section 4(b)(2) of the Act

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an area from critical habitat if he determines that the benefits of such exclusion outweigh the

benefits of specifying such area as part of the critical habitat, unless he determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise his discretion to exclude the area only if such exclusion would not result in the extinction of the species.

When identifying the benefits of inclusion for an area, we consider the additional regulatory benefits that area would receive from the protection from adverse modification or destruction as a result of actions with a Federal nexus; the educational benefits of mapping essential habitat for recovery of the listed species; and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

When identifying the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation; the continuation, strengthening, or encouragement of partnerships; or implementation of a management plan that provides equal to or more conservation than a critical habitat designation would

provide.

In the case of the Buena Vista Lake shrew, the benefits of critical habitat include public awareness of the shrew's presence and the importance of habitat protection, and in cases where a Federal nexus exists, increased habitat protection for the shrew due to the protection from adverse modification or destruction of critical habitat. Since the shrew was first listed, we have consulted on projects on privately owned land that involved waterways, oil and gas development and exploration, and operations and maintenance of electricity transmission lines.

When we evaluate the existence of a conservation plan when considering the benefits of exclusion, we consider a variety of factors, including but not limited to, whether the plan is finalized; how it provides for the conservation of the essential physical or biological features; whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future; whether the conservation strategies in the plan are likely to be effective; and whether the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information.

After identifying the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the

benefits of inclusion, we then determine whether exclusion would result in extinction. If exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

Based on the information provided by entities seeking exclusion, as well as any additional public comments received, we will evaluate whether certain lands in the revised proposed critical habitat are appropriate for exclusion from the final designation pursuant to section 4(b)(2) of the Act. If the analysis indicates that the benefits of excluding lands from the final designation outweigh the benefits of designating those lands as critical habitat, then the Secretary may exercise his discretion to exclude the lands from the final designation.

We have not proposed to exclude any areas from critical habitat, but we are considering whether to exclude the Kern Fan Water Recharge Unit (Unit 3) (2,687 ac (1,088 ha)), from final critical habitat designation. The Kern Fan Water Recharge Unit is owned by the City of Bakersfield and is managed as a groundwater recharge zone. The unit is adjacent to, but is not included in the Kern Water Bank Habitat Conservation Plan and Natural Community Conservation Plan permit area. The City of Bakersfield has managed the unit under a Service-approved management plan that was designed to benefit the shrew. The Service is currently working with the City to enhance the management plan to increase monitoring and funding assurances for the shrew. We are continuing to coordinate with the City, and will examine conservation actions for the shrew, including current management planning documents, in our consideration of the

Kern Fan Water Recharge Unit for exclusion from the final designation of critical habitat for the shrew, under section 4(b)(2) of the Act. We specifically solicit comments on the benefits of inclusion or benefits of exclusion of this area as critical habitat.

Exclusions Based on Economic Impacts

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we are preparing an analysis of the economic impacts of the revised proposed critical habitat designation and related factors.

On April 28, 2011, we released a draft economic analysis (DEA) (Industrial Economics Incorporated (IEc) 2011) analyzing the impacts of designating critical habitat, as proposed in the October 21, 2009, proposed rule (74 FR 53999). In the DEA, the analysts concluded that incremental impacts resulting from the critical habitat designation for the previously proposed units are limited to additional administrative costs of section 7 consultation, and noted two primary sources of uncertainty associated with the incremental effects analysis: (1) The actual rate of future consultation is unknown, and (2) future land use on private lands is uncertain. The analysis did not identify any future projects on private lands beyond those covered by existing baseline projections. Section 7 consultation on the Buena Vista Lake shrew has not occurred on private lands that are not covered by conservation plans (Units 2 and 5). As a result, the analysis did not forecast incremental impacts due to such measures.

For the five units, the DEA estimated total potential incremental economic impacts in areas proposed as revised critical habitat over the next 20 years (2011 to 2030) to be approximately \$133,000 (\$11,700 annualized) in present value terms applying a 7 percent discount rate (IEc 2011, p. 4-2). Administrative costs associated with section 7 consultations on a variety of activities (including pipeline construction and removal, delivery of water supplies under the Central Valley Project, pesticide applications for invasive species, and restoration activities) in proposed critical habitat Units 2, 3, and 4 were expected to total approximately \$53,900 over the next 20 years and made up the largest portion of post-designation incremental impacts, accounting for approximately 39 percent of the forecast incremental impacts (IEc 2011, pp. 4-11–4-12). Impacts were associated with section 7 consultations on Pacific Gas and Electric (PG&E) operations and maintenance activities, internal consultations at the Kern National Wildlife Refuge, section 7 consultations with the U.S. Army Corps of Engineers due to Clean Water Act (33 U.S.C. 1251 *et seq.*) permitting, and the incremental impact of consultations and management plan review for the City of Bakersfield’s Kern Fan Recharge Area.

The incremental costs were broken down by location of expected incremental costs within the five proposed critical habitat units, as follows: Unit 3, Kern Fan (\$84,000 (present-value impacts)), Unit 1, Kern National Wildlife Refuge (\$20,800), Unit 2, Goose Lake Unit (\$16,500), Unit 4, Coles Levee Unit (\$6,340), and Unit 5, Kern Lake Unit (no identified costs). The consultations forecast for proposed critical habitat Units 2 and 5 were limited to those associated with occasional permitted pipeline, restoration, or

water projects. We are currently in the process of analyzing the additional areas we are currently proposing as critical habitat for potential economic impacts and we will issue a revised draft economic analysis once our review has been completed. As a result of the revisions, the potential impacts identified above may change.

We will announce the availability of the revised draft economic analysis as soon as it is completed, at which time we will seek public review and comment. At that time, copies of the draft economic analysis will be available for downloading from the Internet at <http://www.regulations.gov>, or by contacting the Sacramento Fish and Wildlife Office directly (see **FOR FURTHER INFORMATION CONTACT** section). During the development of a final designation, we will consider economic impacts, public comments, and other new information, and areas may be excluded from the final critical habitat designation under section 4(b)(2) of the Act and our implementing regulations at 50 CFR 424.19.

Exclusions Based on National Security Impacts

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where a national security impact might exist. In preparing this revised proposal, we have determined that the lands within the revised proposed designation of critical habitat for the Buena Vista Lake shrew are not owned or managed by the Department of Defense, and, therefore, we anticipate no impact on national security. Consequently, the Secretary does not propose to exercise his

discretion to exclude any areas from the final designation based on impacts on national security.

Peer Review

In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we will seek the expert opinions of at least three appropriate and independent specialists regarding this proposed rule. The purpose of peer review is to ensure that our critical habitat designation is based on scientifically sound data, assumptions, and analyses. We have invited these peer reviewers to comment during this public comment period on our specific assumptions and conclusions in this proposed designation of critical habitat.

We will consider all comments and information received during this comment period on this revised proposed rule during our preparation of a final determination. Accordingly, the final decision may differ from this revised proposal.

Public Hearings

Section 4(b)(5) of the Act provides for one or more public hearings on this proposal, if requested. Requests must be received within 45 days after the date of publication of this proposed rule in the **Federal Register**. Such requests must be sent to the address shown in the **FOR FURTHER INFORMATION CONTACT** section. We

will schedule public hearings on this proposal, if any are requested, and announce the dates, times, and places of those hearings, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Required Determinations—Amended

In our proposed rule published in the **Federal Register** on October 21, 2009 (74 FR 53999), we indicated that we would defer our determination of compliance with several statutes and executive orders until the information concerning potential economic impacts of the designation and potential effects on landowners and stakeholders became available in the DEA. In the April 28, 2011, document making available the DEA (76 FR 23781) we made use of the DEA data to make these determinations. We affirmed the information in our proposed rule concerning Executive Order (E.O.) 12866 (Regulatory Planning and Review), E.O. 12630 (Takings), E.O. 13132 (Federalism), E.O. 12988 (Civil Justice Reform), the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), the National Environmental Policy Act (42 U.S.C. 4321 *et seq.*), and the President’s memorandum of April 29, 1994, “Government-to-Government Relations with Native American Tribal Governments” (59 FR 22951). However, based on the DEA’s data, we amended our required determinations concerning the Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) and E.O. 13211 (Energy Supply, Distribution, and Use). A revised economic analysis will be completed to consider economic impacts due to the revisions to proposed critical habitat

that are included in this document.

Regulatory Planning and Review—Executive Orders 12866 and 13563

Executive Order (E.O.) 12866 provides that the Office of Information and Regulatory Affairs (OIRA) will review all significant rules. The OIRA has determined that this rule is not significant. E.O. 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation’s regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

Regulatory Flexibility Act (5 U.S.C. 601 et seq.)

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq.*) as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C 801 *et seq.*), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a

regulatory flexibility analysis that describes the effects of the rule on small entities (small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of the agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities.

According to the Small Business Administration, small entities include small organizations such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; and small businesses (13 CFR 121.201). Small businesses include such businesses as manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than \$5 million in annual sales, general and heavy construction businesses with less than \$27.5 million in annual business, special trade contractors doing less than \$11.5 million in annual business, and forestry and logging operations with fewer than 500 employees and annual business less than \$7 million. To determine whether small entities may be affected, we will consider the types of activities that might trigger regulatory impacts under this designation as well as types of project modifications that may result. In general, the term “significant economic impact” is meant to apply to a typical small business firm’s business operations.

Importantly, the incremental impacts of a rule must be *both* significant and substantial to prevent certification of the rule under the RFA and to require the preparation of an initial regulatory flexibility analysis. If a substantial number of small entities are affected by the proposed critical habitat designation, but the per-entity economic impact is not significant, the Service may certify. Likewise, if the per-entity economic impact is likely to be significant, but the number of affected entities is not substantial, the Service may also certify.

Under the RFA, as amended, and following recent court decisions, Federal agencies are only required to evaluate the potential incremental impacts of rulemaking on those entities directly regulated by the rulemaking itself, and not the potential impacts to indirectly affected entities. The regulatory mechanism through which critical habitat protections are realized is section 7 of the Act, which requires Federal agencies, in consultation with the Service, to ensure that any action authorized, funded, or carried by the Agency is not likely to adversely modify critical habitat. Therefore, only Federal action agencies are directly subject to the specific regulatory requirement (avoiding destruction and adverse modification) imposed by critical habitat designation. Under these circumstances, it is our position that only Federal action agencies will be directly regulated by this designation. Therefore, because Federal agencies are not small entities, the Service may certify that the proposed critical habitat rule will not have a significant economic impact on a substantial number of small entities.

We acknowledge, however, that in some cases, third-party proponents of the

action subject to permitting or funding may participate in a section 7 consultation, and thus may be indirectly affected. We believe it is good policy to assess these impacts if we have sufficient data before us to complete the necessary analysis, whether or not this analysis is strictly required by the RFA. While this regulation does not directly regulate these entities, in our revision to the draft economic analysis, we will conduct a brief evaluation of the potential number of third parties participating in consultations on an annual basis in order to ensure a more complete examination of the incremental effects of this proposed rule in the context of the RFA. In the April 25, 2011, **Federal Register** document (76 FR 23781) announcing the availability of the DEA, we discussed the incremental impacts that were identified in the DEA, and we include this information above under the section, “Exclusions Based on Economic Impacts.” The previous economic analysis did not review the additional areas proposed in this rule; therefore, we defer our evaluation of the potential indirect effects to non-Federal parties until completion of the revised draft economic analysis we will prepare under section 4(b)(2) of the Act and Executive Order 12866.

In conclusion, we believe that, based on our interpretation of directly regulated entities under the RFA and relevant case law, this designation of critical habitat will only directly regulate Federal agencies which are not by definition small business entities. And as such, we certify that, if promulgated, this designation of critical habitat would not have a significant economic impact on a substantial number of small business entities. Therefore, an initial regulatory flexibility analysis is not required. However, though not necessarily required by the RFA, in our revision to the draft economic analysis for this

current proposal, we will consider and evaluate the potential effects to third parties that may be involved with consultations with Federal action agencies related to this action.

Upon completion of the revised draft economic analysis, we will announce availability of the draft economic analysis of the proposed designation in the **Federal Register** and reopen the public comment period for the revised proposed designation.

Energy Supply, Distribution, or Use—Executive Order 13211

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. We do not expect the designation of this revised proposed critical habitat to significantly affect energy supplies, distribution, or use. Appendix A.2, of the 2011 DEA, provides the finding that although PG&E and Southern California Gas Company operate facilities within the proposed critical habitat designation, no incremental changes in facility operation are forecast and, therefore, the 2011 DEA included the determination that no changes in energy use, production, or distribution were anticipated (IEc 2011, p. A-6). Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required. However, we will further evaluate this issue as we conduct our revised economic analysis, and review and revise this assessment as warranted.

Unfunded Mandates Reform Act (2 U.S.C. 1501 et seq.)

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq.*), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both “Federal intergovernmental mandates” and “Federal private sector mandates.” These terms are defined in 2 U.S.C. 658(5)-(7). “Federal intergovernmental mandate” includes a regulation that “would impose an enforceable duty upon State, local, or tribal governments” with two exceptions. It excludes “a condition of Federal assistance.” It also excludes “a duty arising from participation in a voluntary Federal program,” unless the regulation “relates to a then-existing Federal program under which \$500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority,” if the provision would “increase the stringency of conditions of assistance” or “place caps upon, or otherwise decrease, the Federal Government’s responsibility to provide funding,” and the State, local, or tribal governments “lack authority” to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. “Federal private sector mandate” includes a regulation that “would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal

program.”

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because none of the third-party entities identified in the 2011 DEA met the SBA’s definition of a small government or business. Our finding is based in part on the previous economic analysis conducted for the previous designation of critical habitat and extrapolated to this designation, and partly on where the additional areas proposed for critical habitat within this designation are located. Therefore, a Small Government Agency Plan is not required. However, we will further evaluate this issue as we conduct our revised economic analysis, and review and revise this assessment if appropriate.

Takings—Executive Order 12630

In accordance with Executive Order 12630 (“Government Actions and Interference with Constitutionally Protected Private Property Rights”), this rule is not anticipated to have significant takings implications. As discussed above, the designation of critical habitat affects only Federal actions. Critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. Due to current public knowledge of the species protections and the prohibition against take of the species both within and outside of the proposed areas we do not anticipate that property values will be significantly affected by the critical habitat designation. However, we have not yet completed the economic analysis for this revised proposed rule. Once the revised economic analysis is available, we will review and revise this preliminary assessment as warranted, and prepare a Takings Implication Assessment.

Federalism—Executive Order 13132

In accordance with Executive Order 13132 (Federalism), this proposed rule does not have significant Federalism effects. A Federalism summary impact statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we requested information from, and coordinated development of, the October 21,

2009, proposed critical habitat designation (74 FR 53999) with appropriate State resource agencies in California. The designation of critical habitat in areas currently occupied by the Buena Vista Lake shrew is expected to impose nominal additional regulatory restrictions to those currently in place and, therefore, is expected to have little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments because the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

Civil Justice Reform—Executive Order 12988

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of

the Solicitor has determined that the rule does not unduly burden the judicial system and that it meets the requirements of sections 3(a) and 3(b)(2) of the Order. We have proposed designating critical habitat in accordance with the provisions of the Act. This proposed rule uses standard property descriptions and identifies the elements of physical or biological features essential to the conservation of the Buena Vista Lake shrew within the designated areas to assist the public in understanding the habitat needs of the species.

Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.)

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This

position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County v. Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).]

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

- (1) Be logically organized;
- (2) Use the active voice to address readers directly;
- (3) Use clear language rather than jargon;
- (4) Be divided into short sections and sentences; and
- (5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in the **ADDRESSES** section. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

Government-to-Government Relationship with Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-

to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes.

We determined that there are no tribal lands that were occupied by the Buena Vista Lake shrew at the time of listing that contain the features essential for conservation of the species, and no tribal lands unoccupied by the Buena Vista Lake shrew that are essential for the conservation of the species. Therefore, we are not proposing to designate critical habitat for the Buena Vista Lake shrew on tribal lands.

References Cited

A complete list of references cited in this rulemaking is available on the Internet at <http://www.regulations.gov> and upon request from the Sacramento Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this package are the staff members of the Sacramento Fish and Wildlife Office.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to further amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as proposed to be revised at 74 FR 53999 (October 21, 2009) and set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 16 U.S.C. 1531–1544; 16 U.S.C. 4201–4245; Pub. L. 99-625, 100 Stat. 3500; unless otherwise noted.

2. Amend § 17.95(a) by revising the entry for “Buena Vista Lake Shrew (*Sorex ornatus relictus*)” to read as follows:

§ 17.95 Critical habitat—fish and wildlife.

(a) Mammals.

* * * * *

Buena Vista Lake Shrew (*Sorex ornatus relictus*)

(1) Critical habitat units are depicted for Kern and Kings Counties, California, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of the Buena Vista Lake shrew consist of permanent and intermittent riparian or wetland communities that contain:

(i) A complex vegetative structure with a thick cover of leaf litter or dense mats of low-lying vegetation. Associated plant species can include, but are not limited to, Fremont cottonwoods, willows, glasswort, wild-rye grass, and rush grass. Although moist soil in areas with an overstory of willows or cottonwoods appears to be favored, such overstory may not be essential.

(ii) Suitable moisture supplied by a shallow water table, irrigation, or proximity to permanent or semipermanent water.

(iii) A consistent and diverse supply of prey. Although the specific prey species utilized by the Buena Vista Lake shrew have not been identified, ornate shrews are known to eat a variety of terrestrial and aquatic invertebrates, including amphipods, slugs, and insects.

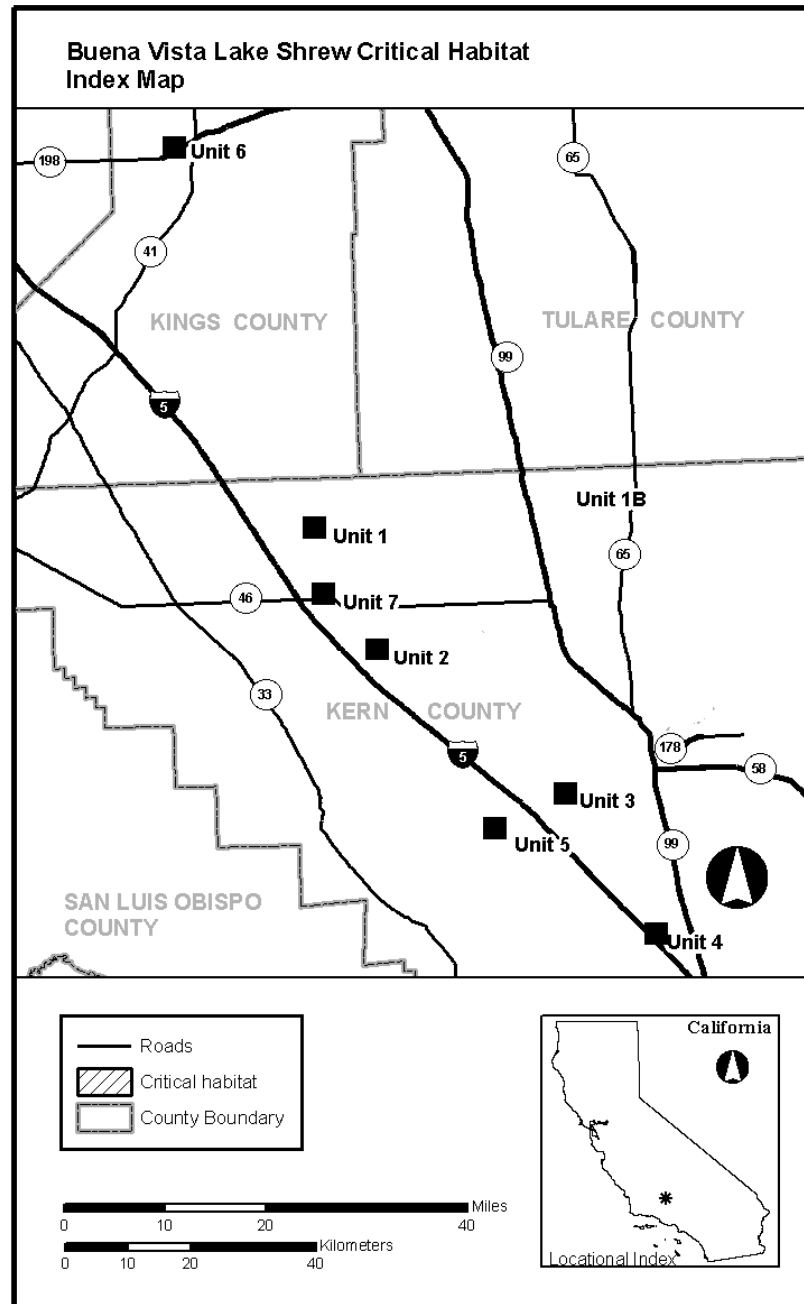
(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

(4) *Critical habitat map units.* Data layers defining map units were created on a base of USGS digital ortho-photo quarter-quadrangles, and critical habitat units were then mapped using Universal Transverse Mercator (UTM) Zone 11 coordinates.

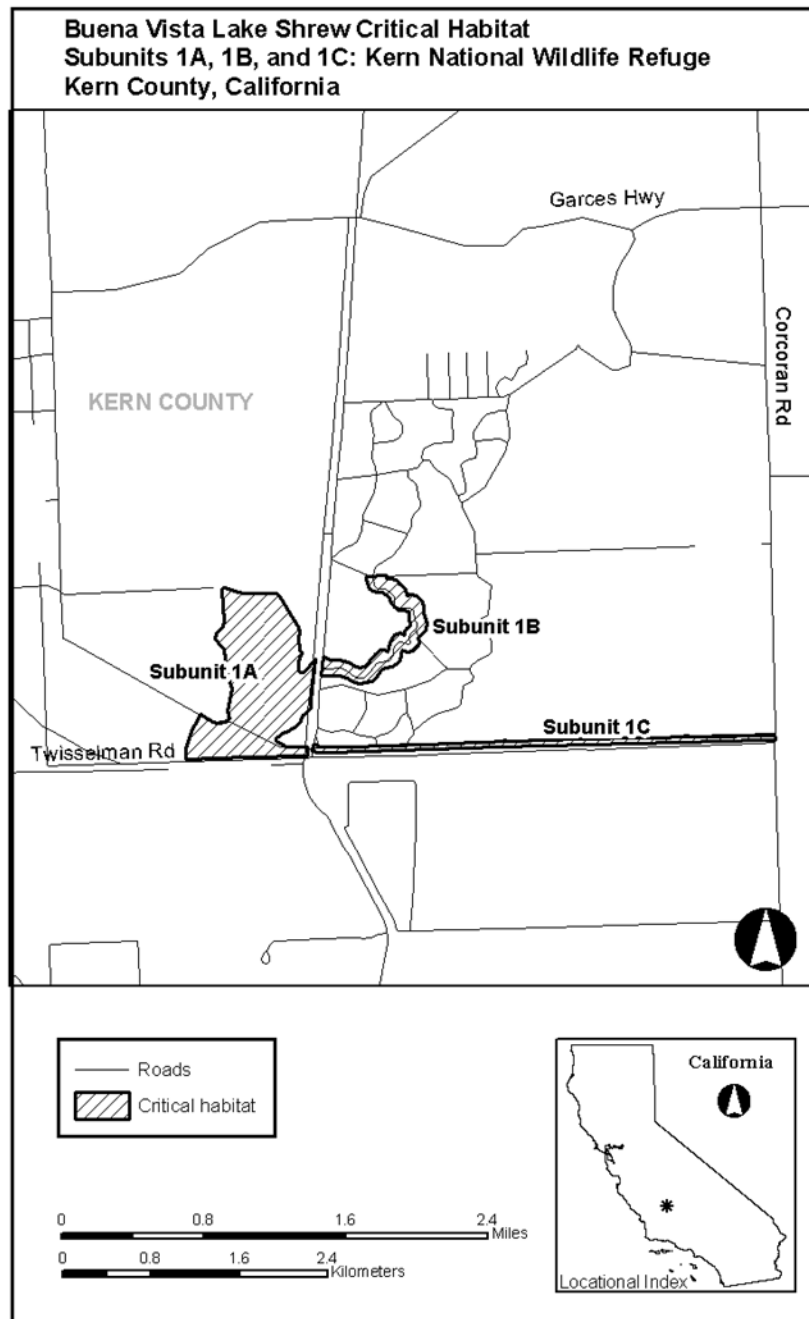
(5) The coordinates for these maps are available on the Internet at <http://www.regulations.gov> at Docket No. FWS-R8-ES-2009-0062, at <http://www.fws.gov/sacramento/>, or at the Sacramento Fish and Wildlife Office, 2800 Cottage Way, Sacramento, CA 95825.

(6) The index map of critical habitat units for the Buena Vista Lake shrew (*Sorex*

ornatus relictus) in Kern and Kings Counties, California follows:



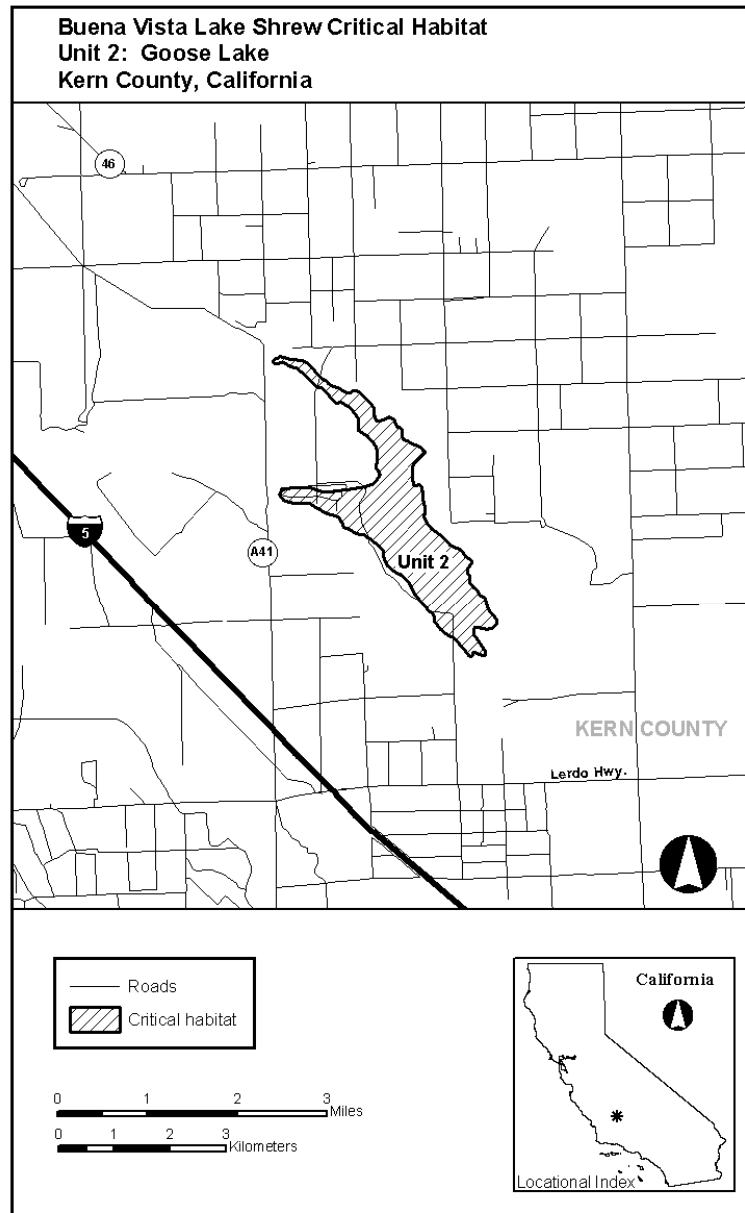
(7) Subunit 1A: Kern National Wildlife Refuge, Kern County, California. Map of Subunits 1A, 1B, and 1C follows:



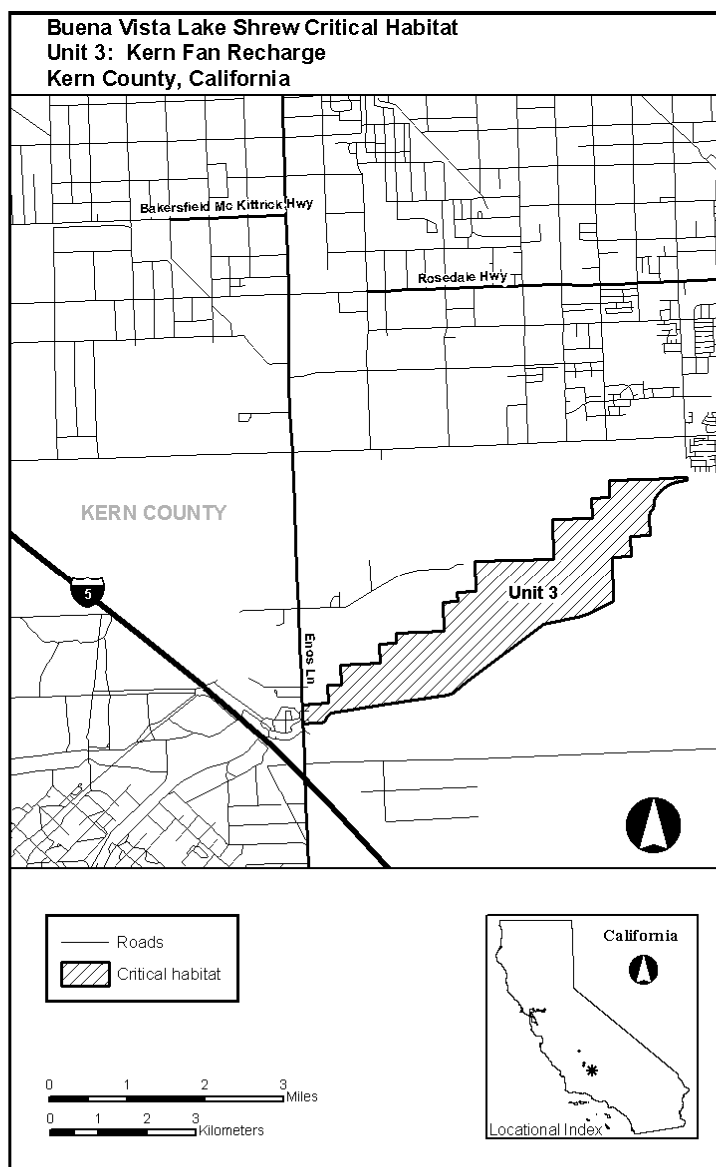
(8) Subunit 1B: Kern National Wildlife Refuge, Kern County, California. Map of Subunits 1A, 1B, and 1C is provided at paragraph (7) of this entry.

(9) Subunit 1C: Kern National Wildlife Refuge, Kern County, California. Map of Subunits 1A, 1B, and 1C is provided at paragraph (7) of this entry.

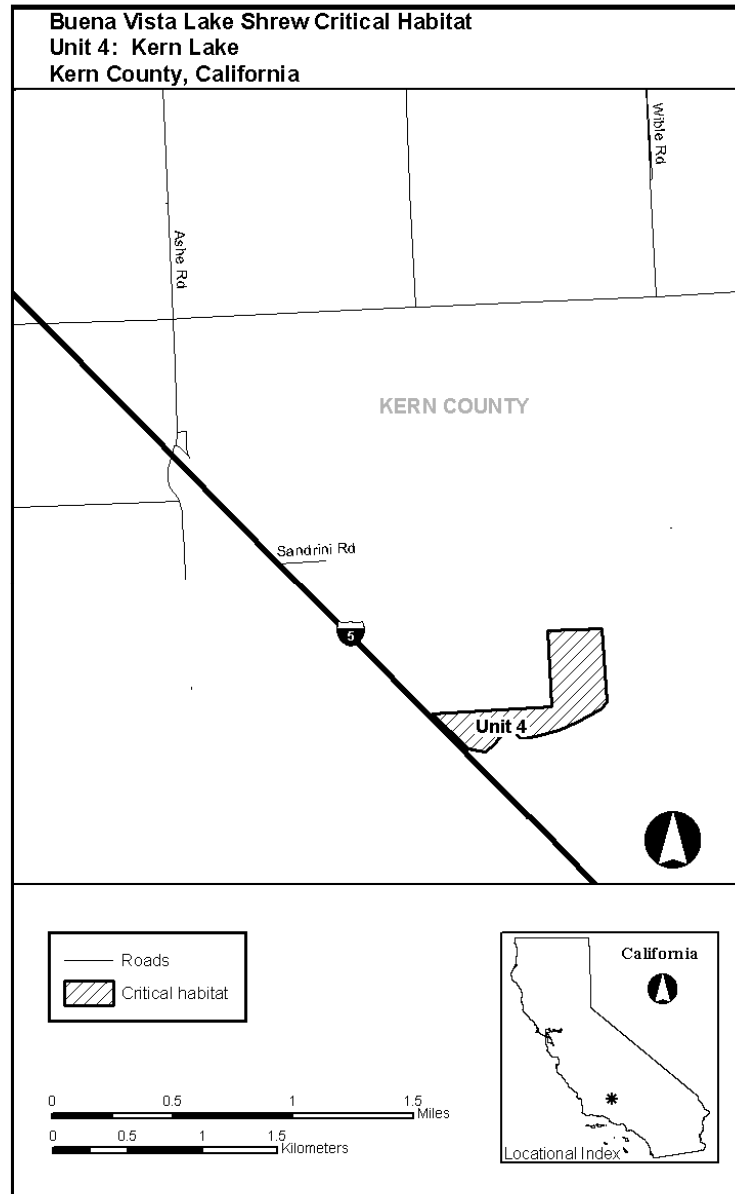
(10) Unit 2: Goose Lake, Kern County, California. Map follows:



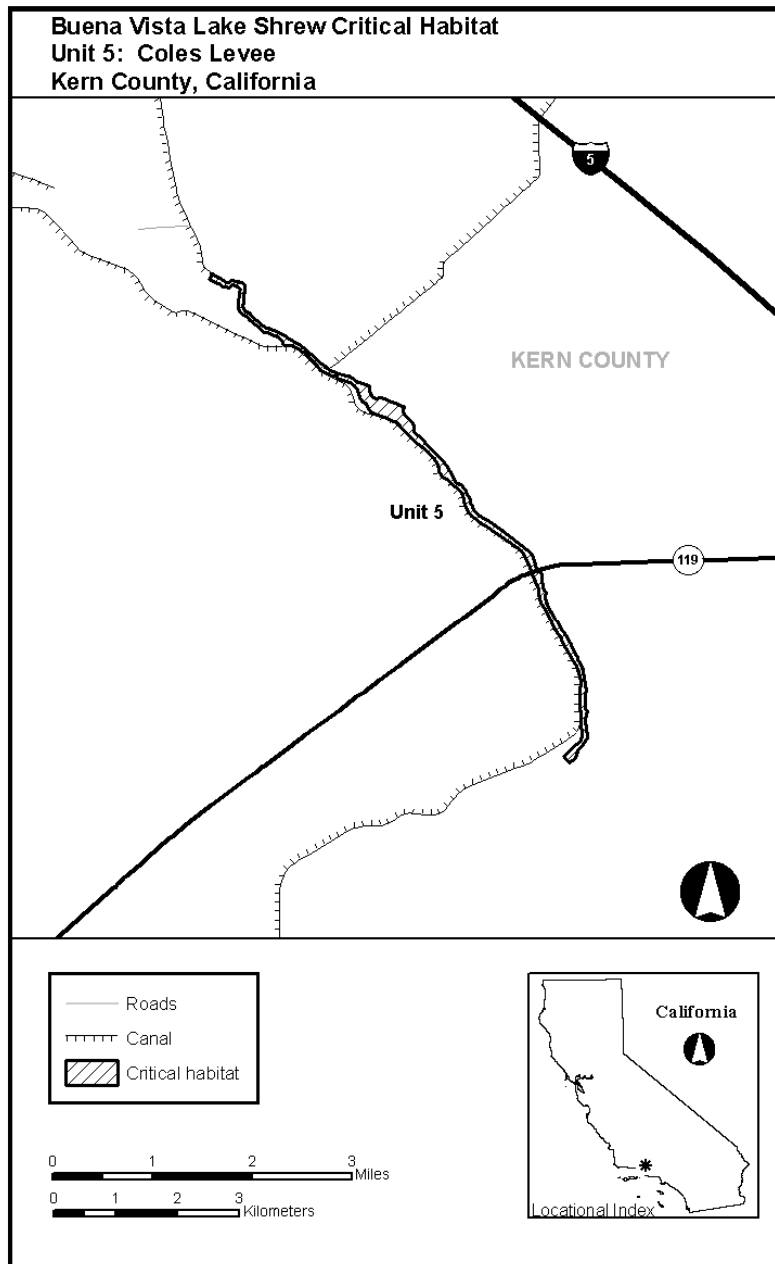
(11) Unit 3: Kern Fan Recharge Unit, Kern County, California. Map follows:



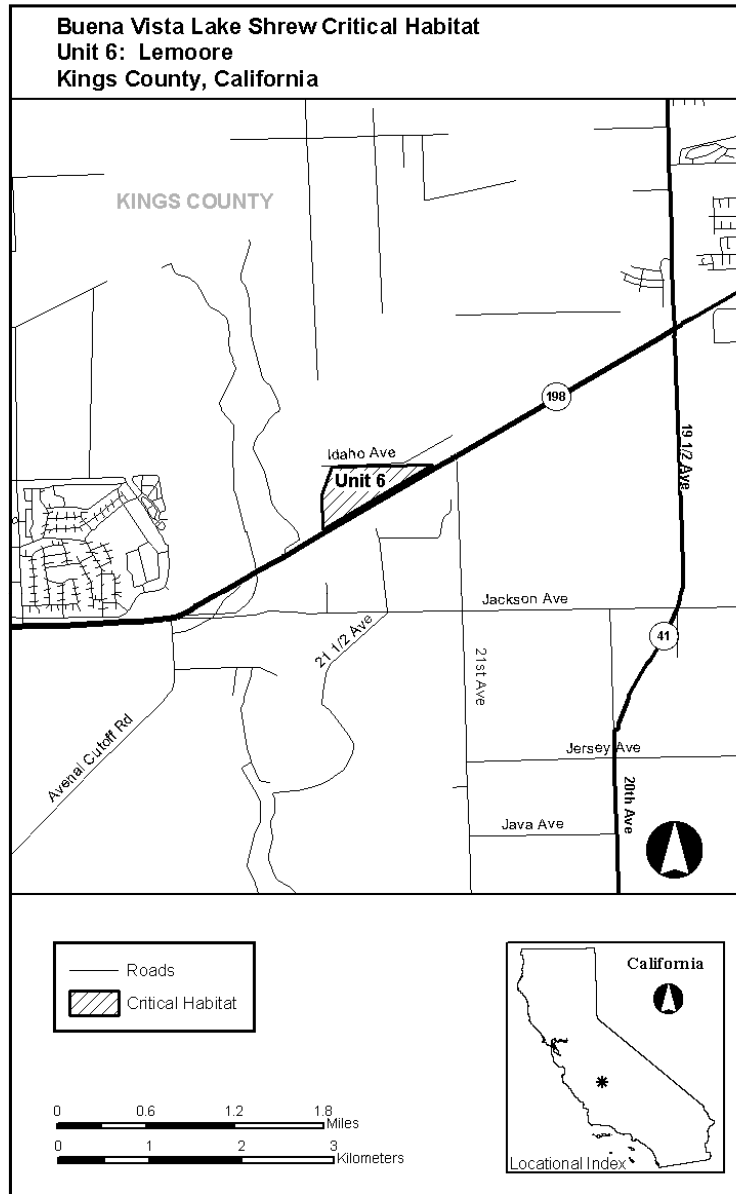
(12) Unit 4: Kern Lake, Kern County, California. Map follows:



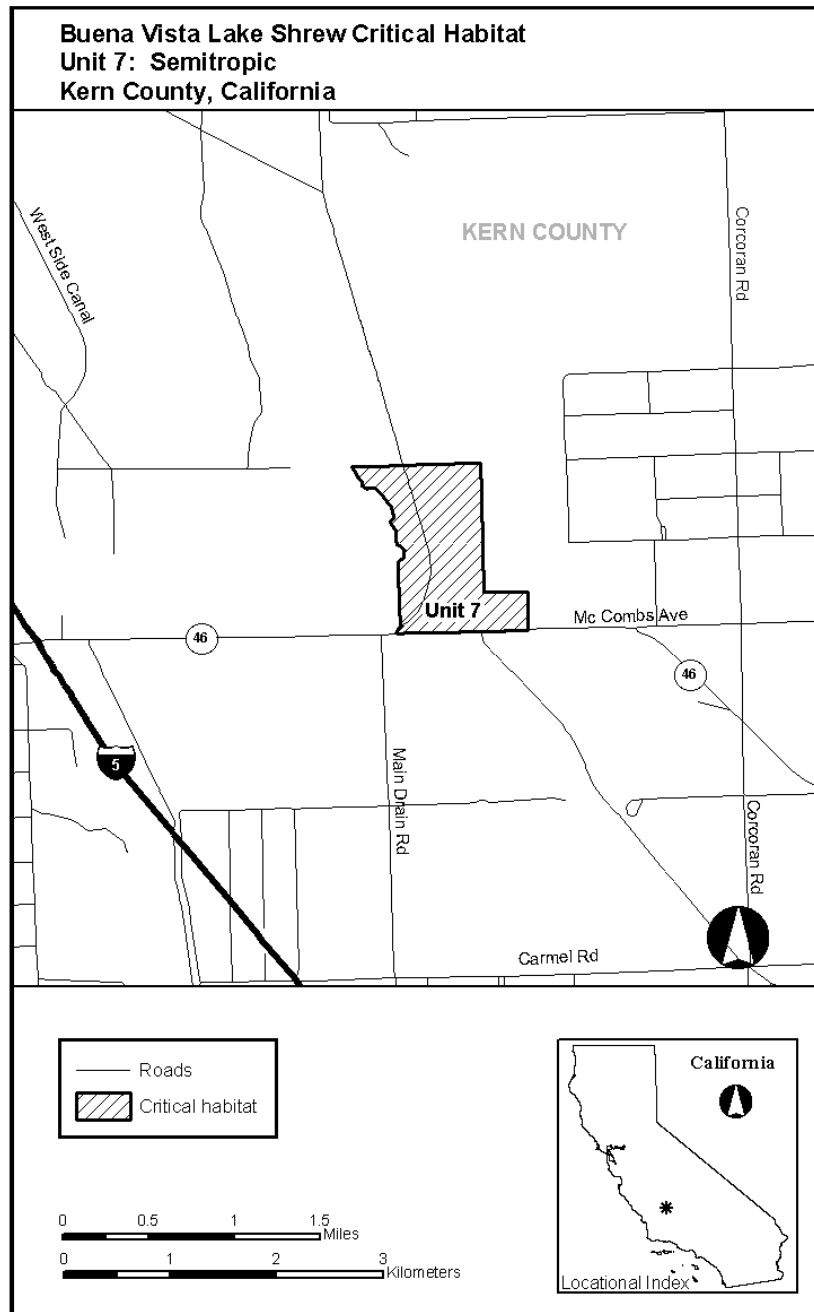
(13) Unit 5: Coles Levee, Kern County, California. Map follows:



(14) Unit 6: Lemoore Unit, Kern County, California. Map follows:



(15) Unit 7: Semitropic Unit, Kern County, California. Map follows:



* * * * *

Dated: June 26, 2012

/s/ Michael J. Bean

Acting Assistant Secretary for Fish and Wildlife and Parks

**~~[Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat
for Buena Vista Lake Shrew]~~**

Billing Code 4310-55-P

[FR Doc. 2012-16479 Filed 07/09/2012 at 8:45 am; Publication Date: 07/10/2012]